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| **1.** | A standard brick weighs about 4.5 pounds. Seth needs 1.2 × 104 bricks to build his house. What is the total weight of the bricks for Seth’s house? |
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| **A.** | 2.7 × 103 pounds |

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| **B.** | 5.4 × 103 pounds |

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| **C.** | 5.4 × 104 pounds |

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| **D.** | 5.7 × 104 pounds |

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| **2.** | A penny has a diameter of 0.75 inches. If 1.0 × 104 pennies were placed in a line, how long would the line be? |
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| **A.** | 7.5 × 103 inches |

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| **B.** | 7.5 × 104 inches |

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| **C.** | 7.5 × 105 inches |

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| **D.** | 7.5 × 106 inches |

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| **3.** | About 3.3 × 106 students graduated from high school last year. If 0.66 of those graduates enrolled in college, ***approximately*** how many students enrolled in college? |
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| **A.** | 5.0 × 106 |

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| **B.** | 2.18 × 106 |

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| **C.** | 5.0 × 103 |

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| **D.** | 2.18 × 103 |

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| **4.** | The mass of an average snow crystal is 2.9 × 10–8 kilograms. An average snowflake has 100 snow crystals in it. What is the mass of an average snowflake? |
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| **A.** | 2.9 × 10–6 kilograms |

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| **B.** | 2.9 × 10–7 kilograms |

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| **C.** | 2.9 × 10–8 kilograms |

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| **D.** | 2.9 × 10–10 kilograms |

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| **5.** | **One uranium atom has a diameter of** /files/assess_files/83c9eec1-bf68-4eb1-806c-4d60b94976f1/e51ff3d1-5645-4800-8db5-d86388c829c8.png **centimeters. What is the sum of 1,000,000 uranium atoms’ diameters, in centimeters, written in standard notation?** |
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| **A.** | 3.5 |

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| **B.** | 0.35 |

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| **C.** | 0.035 |

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| **D.** | 0.0035 |

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| **6.** | **Hoover Dam is located on the Colorado River between Nevada and Arizona. Every second, 270,000 cubic feet of water pass through each of the dam’s 2 spillways. Which is the BEST estimate of the number of cubic feet of water that pass through both spillways in 1 hour?** |
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| **A.** | 2 × 106 |

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| **B.** | 3 × 107 |

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| **C.** | 3 × 108 |

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| **D.** | 2 × 109 |

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| **7.** | **With a weight of approximately** /files/assess_files/59c26d07-9b9d-4ad8-ac16-7838af2866f1/1eaa1029-aae8-478f-8fab-9f78cf03add9.png **tons, Hoover Dam spans the Colorado River between Nevada and Arizona. What is its weight in pounds? (Express your result in scientific notation.)** |
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| **A.** | /files/assess_files/b516831f-e6d8-4935-abe3-be38564c492e/efc4d223-c0b4-4f62-bd82-6c505b558173.png |

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| **B.** | /files/assess_files/37793174-5817-45ed-9de9-363b3e715b9d/fbacc4d5-92e1-457d-8528-816d8b545b3e.png |

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| **C.** | /files/assess_files/874d4190-6d1e-4fbc-9ea4-d0cc9b67dbef/624f397a-aad9-4c59-87a0-1c685a665bc8.png |

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| **D.** | /files/assess_files/8cfc01b2-6ef4-402b-9bed-eea5e641a7dd/fc86bedf-f5a9-4cf8-85c7-d5d37f2bc18d.png |

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| **8.** | **The Click-O Pen Company produced** /files/assess_files/f4dfbeff-c83f-4484-baaf-74a880fe532e/e9f02b32-972e-43f2-9efd-81d3db1ed13f.png **pencils each year for 4 years. What was the total number of pencils the Click-O Pen Company produced during those 4 years?** |
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| **A.** | /files/assess_files/d27e3d85-4ffe-424f-a747-b7da5e4bc6bf/cc9ef115-f9df-4e9a-a2be-9d346d1ba2c2.png |

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| **B.** | /files/assess_files/e639c0ea-79f5-4994-92ff-eab0033657e2/785f066d-0e4c-47c7-be3d-c781f0e620af.png |

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| **C.** | /files/assess_files/a1ad1e03-9e08-4bfa-8184-e0d4bc23c373/b04e5b89-17cd-49d6-ad2b-a437e75889bc.png |

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| **D.** | /files/assess_files/10fe6946-c8a6-4049-8d74-9c3d2928d85d/0849a1ec-34dd-4815-929a-4f229b94704e.png |

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| **9.** | **The circumference of Earth is approximately** /files/assess_files/e8bbd35a-e817-4330-9c95-fefd729bd271/e55dd172-0dfc-4735-b31f-9866359bf54d.png **miles. If Philip traveled around the circumference of Earth 20 times, what would be the approximate number of miles he traveled?** |
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| **A.** | /files/assess_files/9cd682d1-ba50-4a5d-b84a-db391fe3c456/2fc5e4ab-089e-4007-8cfd-8877d3f8d92b.png |

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| **B.** | /files/assess_files/25715179-3a07-41a7-872a-4a9dd9fda8f8/73f1c480-fa6d-43b1-9d85-53a7c97d5b2a.png |

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| **C.** | /files/assess_files/6213eefa-33b7-4365-960e-40e22dffa1b6/e84fd4fa-7a5c-4022-a57b-b76d2137ca0d.png |

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| **D.** | /files/assess_files/f0f136e7-cdb4-4570-bfad-3b89c434bda4/3e0c6986-0c83-4392-b9b5-7e2c45d7f6e0.png |

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| **10.** | **Neptune has an average distance from the Sun of** /files/assess_files/ed45f906-3bee-4894-a9b6-d2d0533f66c7/b92f741b-44f7-4f89-a22a-54631eb35d05.png **miles. Earth has an average distance from the Sun of** /files/assess_files/ed45f906-3bee-4894-a9b6-d2d0533f66c7/69ea0213-f2d4-42d7-a766-2793e1ccc460.png **miles. Which of the following is closest to the number of times Neptune is farther from the Sun than Earth is from the Sun?** |
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| **A.** | 0.003 |

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| **B.** | 0.03 |

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| **C.** | 30 |

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| **D.** | 300 |

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| **11.** | **One micron (a millionth of a meter) is equivalent to** /files/assess_files/6f2d267f-1339-4714-bd26-3b2fdda15c9f/198617e5-0883-4942-99fe-c7317cb7119d.png **inch. One thousand microns would be equivalent to what part of an inch?** |
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| **A.** | /files/assess_files/64362e32-c66e-42ed-b50a-3b2a5e508f3e/2751a953-f04f-43dd-afe6-61110e6ec93e.png |

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| **B.** | /files/assess_files/928e6be9-32f1-4c9f-9efc-715f77284aeb/e44e7a9b-04c7-4609-ab9b-3c82c7a8a2c2.png |

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| **C.** | /files/assess_files/824024b4-50c8-4ff1-8a88-d3b580885cd0/2f9c7f50-0b69-45e7-b89b-b8c2bc95f818.png |

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| **D.** | /files/assess_files/9f21ce23-81f2-49d6-90c3-e1d497a30399/3afb3a47-1fcc-4fb2-b1c4-f4fe8b0aa607.png |

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| **12.** | **The mass of Jupiter is approximately** /files/assess_files/cf651e08-e5bd-440b-94a9-2c8843a64213/e337b514-8544-46ce-bbf5-f0719d650efc.png **kilograms, while the mass of the Earth is approximately** /files/assess_files/cf651e08-e5bd-440b-94a9-2c8843a64213/95f3a83c-70c6-46fa-bd54-61f98065909b.png **kilograms. The mass of Jupiter is approximately how many times the mass of the Earth?** |
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| **A.** | 0.318 |

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| **B.** | 3.18 |

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| **C.** | 318 |

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| **D.** | 3180 |

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| **13.** | **The mass of Earth is** /files/assess_files/b8f58d78-6126-4f87-bb01-833fcc917cc6/8c88978b-2b73-4db5-947f-0b0628ffe721.png **kilograms, of which** /files/assess_files/b8f58d78-6126-4f87-bb01-833fcc917cc6/84ffeba8-c7a7-433c-8909-d8b131e546bb.png **kilograms comes from its oceans. The mass of Earth’s oceans is closest to what percentage of the mass of Earth?** |
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| **A.** | 0.23% |

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| **B.** | 0.43% |

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| **C.** | 0.023% |

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| **D.** | 0.043% |

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| **14.** | **The highest and lowest frequencies a porpoise can hear are approximately** /files/assess_files/794fad79-5ced-46f3-9fe6-35b41e7a0028/b8cedec4-fb6f-445b-acf3-91513acdcf55.png **and** /files/assess_files/794fad79-5ced-46f3-9fe6-35b41e7a0028/d7b407d4-d694-4082-90bb-e5f3469fa42d.png **cycles per second. Which is a reasonable estimate of the quotient of the highest and lowest audible frequencies of a porpoise?** |
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| **A.** | between 1000 and 10,000 |

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| **B.** | between 10,000 and 100,000 |

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| **C.** | between 100,000 and 1,000,000 |

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| **D.** | between 10,000,000 and 100,000,000 |

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| **15.** | **The nearest galaxy to the Milky Way is Andromeda, which is approximately** /files/assess_files/418adffe-73cc-4095-b2d7-68ca05a62070/521d3546-b1da-4e5b-bcfc-4da562917764.png **light-years from the Milky Way. One light-year is approximately** /files/assess_files/418adffe-73cc-4095-b2d7-68ca05a62070/d618d5a2-eba2-4193-9a6b-0cfb39480b27.png **miles. The distance in miles between the Milky Way and Andromeda is between which two numbers?** |
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| **A.** | /files/assess_files/91aff8fa-e16c-4968-8f44-5c3377c1d2a7/93b235c7-2bbd-419a-bc3e-dc0f7ec0e0ae.png |

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| **B.** | /files/assess_files/fbf7cbd2-14b7-4bc6-8335-7deb56e341cb/dcd2b586-576a-40db-95ea-e247ee25ca0d.png |

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| **C.** | /files/assess_files/46488893-6b61-4116-86f7-70062696ae5c/9a2d7648-0c90-4ac1-950d-d4df42dfc844.png |

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| **D.** | /files/assess_files/926c9c54-2b82-429c-8de7-446ae5db7a78/c0ede7f7-7303-4d21-bab5-4f9fd5350919.png |

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| **16.** | A light year is defined as the distance light travels in one year. One light year is 9.46 × 1012 kilometers. A galaxy is about 150,000 light years wide. ***About*** how many kilometers wide is the galaxy? |
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| **A.** | 1.419 × 1016 |

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| **B.** | 1.419 × 1017 |

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| **C.** | 1.419 × 1018 |

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| **D.** | 1.419 × 1019 |

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| **17.** | Patrick has a memory card that has a capacity of 4 × 106 bytes of data. The disk currently has 3 × 104 bytes of data on it. What percent of the card’s capacity has been used? |
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| **A.** | 0.75% |

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| **B.** | 1.3% |

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| **C.** | 7.5% |

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| **D.** | 13.3% |

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| **18.** | The thickness of a piece of paper is 0.0032 inch. A stack of paper in a warehouse measures 102 inches high. How many pieces of paper are in the stack? |
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| **A.** | 3.1875 × 104 |

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| **B.** | 3.1875 × 103 |

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| --- | --- |
| **C.** | 3.2640 × 10–1 |

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| **D.** | 3.2640 × 10–4 |

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| **19.** | What is the value of (0.004)(0.0002)? |
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| **A.** | 6 × 10–5 |

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| **B.** | 6 × 10–7 |

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| --- | --- |
| **C.** | 8 × 10–5 |

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| --- | --- |
| **D.** | 8 × 10–7 |

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| **20.** | What is the value of (6.2 × 10–3)(3.17 × 107)? |
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| **A.** | 1.9654 × 105 |

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| **B.** | 1.9654 × 104 |

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| **C.** | 1.9654 × 10–4 |

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| **D.** | 1.9654 × 10–21 |

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| **21.** | Hurricane Sandy cost about 6.5 × 1010 dollars in damages. Hurricane Katrina cost about 1.08 × 1014 dollars in damages. ***About*** how many times more did Hurricane Katrina cost than Hurricane Sandy? |
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| **A.** | 1.7 × 103 |

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| **B.** | 1.7 × 104 |

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| **C.** | 7 × 104 |

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| --- | --- |
| **D.** | 7 × 1024 |

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| **22.** | The mass of Earth is about 5.972 × 1024 kg. The mass of Mercury is about 1.81 × 101 times lighter than the mass of Earth. What is the ***approximate*** mass of Mercury? |
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|   |

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| **A.** | 1.08 × 1026 kg |

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| **B.** | 1.08 × 1024 kg |

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| **C.** | 3.30 × 1024 kg |

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| **D.** | 3.30 × 1023 kg |

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| **23.** | The speed of light is about 6.7 × 108 miles per hour. The Earth is about 2.56 × 1013 miles away from the star, Alpha Centauri. ***Approximately*** how many hours will it take for light to travel from the star Alpha Centauri to Earth? |
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| **A.** | 3.82 × 104 hours |

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| **B.** | 3.82 × 105 hours |

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| --- | --- |
| **C.** | 3.82 × 1020 hours |

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| **D.** | 3.82 × 1021 hours |

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| **24.** | What is the value of  /files/assess_files/416aa09b-845e-4000-a782-551c057cd501/d43cb679-cc40-4bc2-bf68-343e48e62cf9.png ? |
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| **A.** | 0.02 |

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| **B.** | 0.2 |

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| **C.** | 2 |

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| **D.** | 200 |

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| **25.** | Which expression is equivalent to /files/assess_files/293cf319-8ce4-4f23-a1bc-1115e81a647b/e17dac43-998d-4f97-9221-8c20763b6231.png? |
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|   |

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| **A.** | 6 × 103 |

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| --- | --- |
| **B.** | 6 × 104 |

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| **C.** | 6 × 1011 |

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| **D.** | 6 × 1012 |

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| **26.** | What is the value of the expression (0.0005)(2 × 10–3)? |
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| **A.** | 1 × 10–6 |

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|   |

|  |  |
| --- | --- |
| **B.** | 1 × 109 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 5 × 10–6 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 5 × 109 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **27.** | Which value is equivalent to (8.5 × 103)(0.0001)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 0.085 |

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|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 0.85 |

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|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 8.5 |

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|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 85 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **28.** | Which expression is equivalent to /files/assess_files/3af68b90-e637-4379-a542-66c3aee77599/c615013f-d155-4324-8048-92448d5c2f9a.png? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.1 × 10–5 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.1 × 10–2 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 2.75 × 10–5 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 2.75 × 10–2 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **29.** | Which expression is equivalent to 320(4 × 103)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.28 × 104 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.28 × 105 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 1.28 × 106 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 1.28 × 107 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **30.** | Which expression is equivalent to (5 × 109)(0.00035)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.75 × 10–4 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.575 × 10–2 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 1.575 × 103 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 1.75 × 106 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **31.** | What is the value of  /files/assess_files/270cf3d7-a62f-4dca-9530-f732580691d1/2e9e024a-84e9-4843-b5de-674d6850cd9e.png ? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 2 × 10–3 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 2 × 10–15 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 3.6 × 10–3 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 3.6 × 10–15 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **32.** | Using a microscope, Maggie can see items that are approximately 1 × 10–6 meter in size. With a new microscope, Maggie can see items that are 20 times smaller. What is the ***approximate*** size of items that Maggie can see with the new microscope? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 5 × 10–8 meter |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 2 × 10–7 meter |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 2 × 10–5 meter |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 5 × 10–5 meter |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **33.** | What is the value of the expression /files/assess_files/261654d1-1490-4fb1-916b-b49090fb3661/82f66567-02d5-4c55-8e0b-e745f8177049.png ? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 4 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 0.00004 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 0.000004 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 4,000,000 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **34.** | Which expression is equivalent to (2.85 × 10–8)(3.4 × 1012)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 8.38 × 103 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 9.69 × 104 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 8.38 × 1019 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 9.69 × 1020 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **35.** | The average size of a virus particle is about 1 × 10–7 m. The average size of the largest known bacterium cell is about 5 × 103 times larger than that of the virus particle. What is the ***approximate*** average size of the largest bacterium cell? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 5 × 1010 m |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 5 × 10–4 m |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 5 × 10–10 m |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 5 × 10–21 m |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **36.** | Suppose an asteroid has a circumference of 1.276 × 107 inches. Another asteroid has a circumference that is about 2.5 × 103 times larger than the first asteroid’s circumference. What is the ***approximate*** circumference of the second asteroid? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 3.19 × 101 inches |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 3.19 × 104 inches |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 3.19 × 1010 inches |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 3.19 × 1021 inches |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **37.** | Which expression is equivalent to (7.1 × 105) ÷ 2? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 3.55 × 10–5 |

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|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 3.55 × 10–2.5 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 3.55 × 102.5 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 3.55 × 105 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **38.** | A book is about 9.3 × 10–2 meters thick. A bookshelf is about 1.865 × 101 meters long. ***About*** how many copies of this book will fit on the bookshelf? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 17 books |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 20 books |

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|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 200 books |

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|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 498 books |

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|  |  |
|   |   |

|  |  |
| --- | --- |
| **39.** | Which expression is equivalent to (2 × 105)(0.00000006)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 0.12 × 10–2 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.2 × 10–2 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 1.2 × 105 |

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|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 12 × 107 |

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|  |  |
|   |   |

|  |  |
| --- | --- |
| **40.** | Which expression is equivalent to (0.005)(2.6 × 108)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.3 × 106 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.3 × 105 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 1.3 × 10–10 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 1.3 × 10–9 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **41.** | What is the solution to /files/assess_files/c60d25c9-8be1-49ed-b5a0-f5db11490de3/ee5bc33d-f555-4628-a95d-904122e4f357.png? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 2 × 10–1 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.25 × 10–1 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 1.25 × 107 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 2 × 107 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **42.** | Which expression is equivalent to (4 × 105)(0.0002)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 2 × 10–4 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 2 × 10–3 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 4 × 107 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 8 × 101 |

 |
|  |  |
|   |   |

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| --- | --- |
| **43.** | What is the value of (1.48 × 10–8) ÷ (2 × 10–6)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 0.74 |

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|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 0.074 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 0.0074 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 0.00074 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **44.** | Which expression is equivalent to (4.5 × 104)(1,200)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 5.4 × 106 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 5.4 × 107 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 5.7 × 106 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 5.7 × 107 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **45.** | What is the value of the expression /files/assess_files/7af9decd-f484-4a14-9ed4-44c9de16076d/8c2a707f-3cea-438a-85c2-8863d2983b87.png ? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.5 × 10–12 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.5 × 104 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 1.75 × 10–12 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 1.75 × 104 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **46.** | What is the value of /files/assess_files/e5e1febb-8b7c-47bc-b5bc-7113b8b18e5e/ed5d41d6-74a0-4183-b6c0-73f979b2c249.png ? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 7 × 1010 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 7 × 109 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 7 × 106 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 7 × 105 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **47.** | Which expression is equivalent to (5.7 × 10–4)(80,000)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 4.56 × 101 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 4.56 × 109 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 8.23 × 101 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 8.23 × 109 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **48.** | Which expression is equivalent to (4 x 106)(1.03)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 2.4 × 105 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 2.4 × 106 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 4.12 × 106 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 4.12 × 107 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **49.** | Which value is equivalent to (6.4 × 108)(0.0003)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.92 × 104 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.92 × 105 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 6.4003 × 108 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 6.4003 × 1024 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **50.** | What is the value of the expression (2.4 × 106)(3 × 108)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 7.2 × 1048 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 7.2 × 1014 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 5.4 × 1014 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 5.4 × 1048 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **51.** | What is the value of  /files/assess_files/1f328906-3a67-4273-8dd3-aab3d5a7c6e7/5e9f2cc4-a12b-4434-8dbe-6fb0087da78a.png ? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.7 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 17 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 170 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 1,700 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **52.** | Which value is equal to (2.7 × 10–4) ÷ (9 × 10–7)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 0.3 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 3 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 30 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 300 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **53.** | What is the value of  /files/assess_files/3547147b-cd38-41d7-9af3-fb6f3e6155f9/3a087b74-efa2-46c6-b15c-70e4e5ecf48c.png ? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.2 × 101 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.2 × 102 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 1.2 × 105 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 1.2 × 106 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **54.** | Which is equivalent to (6 × 109) ÷ (8 × 10–3)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 4.8 × 107 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 4.8 × 1013 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 7.5 × 106 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 7.5 × 1011 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **55.** | Which value is equivalent to (0.332)(1.4 × 106)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 4.648 × 10–5 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 4.648 × 10–1 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 4.648 × 102 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 4.648 × 105 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **56.** | What is the value of /files/assess_files/844b184c-0adf-41c2-8db4-c34a6706038c/99af4afa-7aac-46e5-81c6-b097c9c93f59.png ? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 2 × 101 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 2 × 102 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 2 × 103 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 2 × 107 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **57.** | What is the value of (0.00035)(1.75 × 10–4) in scientific notation? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 2.1 × 10–8 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 6.125 × 10–8 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 6.125 × 10–4 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 2.1 × 103 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **58.** | Which is equivalent to (7 × 10–2)(0.03)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 2.1 × 10–4 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 2.1 × 10–3 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 2.1 × 103 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 2.1 × 104 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **59.** | Which expression is equivalent to (5.75 × 1012)(3 × 10–18)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.725 × 10–6 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.725 × 10–5 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 1.725 × 106 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 1.725 × 105 |

 |
|  |  |
|   |   |

|  |  |
| --- | --- |
| **60.** | Which expression is equivalent to (5.2 × 107) ÷ (4.0 × 10–3)? |
|  |
|   |

|  |  |
| --- | --- |
| **A.** | 1.3 × 10–10 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **B.** | 1.3 × 104 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **C.** | 1.3 × 109 |

 |
|  |  |
|   |

|  |  |
| --- | --- |
| **D.** | 1.3 × 1010 |

 |
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| **61.** | Which number is equivalent to 1.89 × 107? |
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| **A.** | 1,890,000 |

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| **B.** | 18,900,000 |

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| **C.** | 189,000,000 |

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| **D.** | 1,890,000,000 |

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| **62.** | Which expression is equivalent to /files/assess_files/58ff5872-43b0-4268-8e90-0cc4e553948e/da71895c-58cd-4552-a4f5-18b54c57f93c.png ? |
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| **A.** | 3 × 10–7 |

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| **B.** | 3 × 10–1 |

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| **C.** | 3 × 101 |

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| **D.** | 3 × 107 |

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| **63.** | The distance from Earth to the moon is 2.389 × 105 miles. If a space shuttle travels to the moon and back, how many miles will the space shuttle have traveled? |
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| **A.** | 4.778 × 1010 |

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| **B.** | 2.389 × 1010 |

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| **C.** | 2.389 × 107 |

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| **D.** | 4.778 × 105 |

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| **64.** | Tectron is a firm that produces two types of refrigerators: large and small. The monthly profit earned, in thousands of dollars, on the large refrigerators is modeled by the function /files/assess_files/ab30e5f4-f7d4-484c-aeab-75fed5869505/images/f51818f0ad627a4fe3be88297cbec141.png where *x* is the change in selling price, in hundreds of dollars. The monthly profit earned on the small refrigerators is modeled by the function /files/assess_files/ab30e5f4-f7d4-484c-aeab-75fed5869505/images/8963f0483b880745fa6dee9c76c2ece6.png Which function can be used to model the total monthly profit earned by the firm? |
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| **A.** | /files/assess_files/be88bd10-70ad-4ced-b780-56ea91f5bd89/images/8c4f830c04bb908b5a1e282b774af785.png |

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| **B.** | /files/assess_files/de3643b1-97eb-4b26-8bb2-dfb2a4579ca9/images/aec1197ff913ed68eb554a28021c80a6.png |

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| **C.** | /files/assess_files/c645b37c-ee0c-4d6c-8536-29b44cce41be/images/12a9a3c35218075bb59563f33572c71e.png |

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| **D.** | /files/assess_files/75e6e622-7f07-4005-a06a-ca9d8d7be3cc/images/0cef6f3c06bf5e51f3a6dd3375b92e80.png |

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| **65.** | On average, graduates of College A earn a salary of $25,000 plus $1,500 for every year after completing their degrees and pay $1,050 minus $100 for every year after completing their degrees to pay for their student loans.Which function represents /files/assess_files/ee7ba38c-127e-43a6-9034-c96da263d7b2/images/502e72a63f2c73a2946be63397b3f21c.png the difference between the average salary graduates of College A earn and the average amount of money they pay for their student loans *t* years after completing their degrees? |
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| **A.** | /files/assess_files/f78f975a-667c-4cd9-b65d-582bb25c2d59/images/cb4d785f63b1ceb0e41ae5e5429b074b.png |

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| **B.** | /files/assess_files/7ada7e6f-67a1-41a3-ad2a-3022d6711526/images/fc4192eb29bfc9b57ac132519cb33b4f.png |

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| **C.** | /files/assess_files/7bf7b942-29d5-4e0c-93ad-b6a37c298b55/images/6cc74ff5f52cddcadd02d2af1892e907.png |

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| **D.** | /files/assess_files/1e5290ae-79d7-4ed8-98e9-cc06332e0e6f/images/8bd1bc25b2e9c854b409f6762e38bd01.png |

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| **66.** | What is the value of  /files/assess_files/4672c351-ce0a-4f97-a4f8-5ac5c750557a/image/e6bdfe28-b462-4ac4-b266-6430f43179a2.gif |
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| **A.** | /files/assess_files/d6e43d76-368f-4472-8cd7-8d422065ff3e/image/0a5c621e-23ab-4008-8d73-3e725fd96c69.gif |

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| **B.** | /files/assess_files/22835bfb-4845-4e83-9ae7-35da04dcd909/image/addac028-b9d6-4f76-84ff-751c5c0646fa.gif |

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| **C.** | /files/assess_files/b4f00198-b7e2-4f3e-86e6-e157ad7a6b3c/image/09d5d481-5b29-4f6a-9e46-f3b2c8256d9a.gif |

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| **D.** | /files/assess_files/5d80cf7d-0cec-421a-9138-b4726b98fffa/image/fbfed91e-b1a1-4b10-ab88-03af286a3968.gif |

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| **67.** | One piece of paper has a thickness /files/assess_files/d3c5cc04-3738-4c1f-92a2-3299ad46d06d/image/90509607-387a-4570-95dc-90b06a882f0a.gifAnother piece of paper has a thickness of /files/assess_files/d3c5cc04-3738-4c1f-92a2-3299ad46d06d/image/983a2f0c-aa1e-43bf-915f-c1217f414d54.gifinches. What is the total thickness, in inches, of these two pieces of paper? |
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| **A.** |   80,000 |

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| **B.** |   8,000 |

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| **C.** |   0.008 |

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| **D.** |   0.0008 |

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| **68.** | What is the approximate difference between 0.003 and 0.000008? |
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| **A.** | /files/assess_files/c9004a2d-596b-4f69-af9b-e15eacecc289/image/9de1f056-ea91-4707-9e01-2dc8627e893f.gif |

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| **B.** | /files/assess_files/31198316-7f83-48e6-b70f-fe67961ee262/image/20d6270c-5ed2-4dc7-aa6c-37c9c20a1a33.gif |

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| **C.** | /files/assess_files/1bda5995-187c-424a-a31e-947b062e2dfb/image/3888598c-d657-447f-8aba-39466049a49f.gif |

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| **D.** | /files/assess_files/57dc2c37-a1b0-4fb0-a5ed-b46b35fd974a/image/46f19f57-5266-4b4e-8af1-cda2e60a2fca.gif |

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| **69.** | Use the values listed below to answer the question. /files/assess_files/847b562e-0cac-4bcf-99b2-cb4571e1504c/image/954472c3-b0af-4662-bac5-533d3c96d1dd.gif What is the product of the least value and the greatest value? |
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| **A.** |   0.000000976 |

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| **B.** |   0.816 |

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| **C.** |   91.5 |

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| **D.** |   3,111 |

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| **70.** | Which distance represents a reasonable average distance from the Earth to the Sun? |
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| **A.** | /files/assess_files/bc9a1583-e5e7-4540-a08b-210241729404/image/6d718ccb-cdb1-49ea-85d7-353c439624b9.gifmiles |

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| **B.** | /files/assess_files/6bf308b2-7cd1-4434-94f3-4bedce0f4f12/image/b91286d9-d156-4c66-bcb0-8b0c9e96c6a4.gifmiles |

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| **C.** | /files/assess_files/6f0f97d4-9eba-4b63-a57e-7cdda2da1b3c/image/1976359f-3e95-427d-969c-a1cdedb48a8c.gifmiles |

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| **D.** | /files/assess_files/72a3f9e7-0402-4bf6-b7d4-bcb6dff16965/image/12d59d47-8abc-4043-80b7-5fe3a9b49417.gifmiles |

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| **71.** | What is the value of /files/assess_files/5a29f894-6b30-4aaf-9e2d-945c5533666d/image/ac115e0b-bd58-468a-a471-2981dc823ce7.gif |
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| **A.** |   2,000 |

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| **B.** |   4,500 |

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| **C.** |   15,000,000 |

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| **D.** |   20,000,000 |

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| **72.** | Blue whales are one of the largest animals on Earth and can weigh up to 200 tons as an adult. Which weight, in pounds (lbs), would be the most appropriate representation for the weight of an adult blue whale? |
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| **A.** | /files/assess_files/464f8acd-e7ce-46a7-80e8-b0cc114e9cae/image/5e796b66-00ff-4de8-aea9-b2a086bb3c24.giflbs |

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| **B.** | /files/assess_files/117502a6-11cf-40fc-a95c-341c973de5ad/image/a67a14b9-762b-466b-836e-14fe8661a695.giflbs |

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| **C.** | /files/assess_files/67d57b48-be79-41d8-9a8c-c22210195eb7/image/86c4eacc-af1a-44fa-8dd2-9c4d7c57fd5c.giflbs |

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| **D.** | /files/assess_files/8d02cbe1-93b6-44b3-9ac4-850aecd500e5/image/34f3a16f-1167-4cfd-83fb-7763a489841b.giflbs |

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| **73.** | What is the value of  /files/assess_files/9b25e9ea-6d1e-47a9-9146-c0c3a9deb4a6/image/bca41ece-979f-4206-903c-9efe66f6d3e3.gif |
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| **A.** | /files/assess_files/3015c579-9188-4a28-97f9-d62c5260bafe/image/9de548f3-d91f-4376-bb97-78e4cbf4fba0.gif |

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| **B.** | /files/assess_files/44c29b63-9c14-44d7-878b-cc0871584692/image/c16ac94b-5930-4ddc-8fd1-0c4da458e11d.gif |

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| **C.** | /files/assess_files/361ebad0-b61d-4150-8148-311055619acb/image/f7e69c6f-a8a4-4ef1-b668-c999099b0a32.gif |

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| **D.** | /files/assess_files/2ef06ace-14b6-4f05-a92b-d5b850984356/image/8f1596c7-8274-4938-8f46-1fc944f2a2da.gif |

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| **74.** | The solution to an expression is displayed on a calculator as shown. /files/assess_files/00ab18f6-38f4-4942-9d45-150476397604/image/a9e1355a-65f5-439d-a4ba-03de4eb56f69.gifWhich number is equivalent to this calculator display? |
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| **A.** |   0.000042 |

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| **B.** |   4.2 |

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| **C.** |   420,000 |

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| **D.** |   4,200,000 |

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| **75.** | Chemists define a mole of a compound as /files/assess_files/1c0e497a-776a-443e-b841-6bee4a9b78a7/image/531d81b1-e79e-48b2-9bb0-d235d2f5ce33.gifmolecules of that compound. How many moles are in /files/assess_files/1c0e497a-776a-443e-b841-6bee4a9b78a7/image/a9127f70-cc12-4347-97fe-ff8376a05d39.gifmolecules? |
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| **A.** |   2 moles |

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| **B.** |   5 moles |

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| **C.** |   20 moles |

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| **D.** |   50 moles |

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| **76.** | The speed of light is approximately 186,000 miles per second. Light travels from the Earth to the Moon in approximately 1.25 seconds. Approximately, how far is the Moon from the Earth, in miles? |
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| **A.** |  /files/assess_files/bc4642cd-9d42-45ac-8799-e2310ac5e9e9/images/427d77d2593f688c6685f84c503ae533.png |

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| **B.** |  /files/assess_files/b70d9535-7080-4ebc-8334-04170742f27d/images/13877cc34c0067e42d4f4c9573317861.png |

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| **C.** | /files/assess_files/200c968d-3217-47a1-a65a-dff24acb89f1/images/8bb0a38b94653ab98facec1bacb8ceb7.png |

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| **D.** |  /files/assess_files/80c872c1-f3e6-4c9a-84ac-2b57a4c04260/images/065ccc6f6f21b6c183f38fd7670bf79c.png |

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| **77.** | Which expression is equivalent to this fraction? /files/assess_files/b1e98931-f193-4507-a88f-c28c8cc22886/images/d771ac8904f984889c6f92470265f5e0.png |
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| **A.** |  /files/assess_files/50f2c103-eb0a-47e6-bb4a-befbc999a34f/images/129a5c5544333450442e7c9f13bc9095.png |

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| **B.** |  /files/assess_files/241b7173-79a6-4356-adaf-46b12198d99f/images/18ddaa22920778d030300ad0b67a3eb3.png |

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| **C.** |  /files/assess_files/16fc40dd-aab0-4c6c-bbb7-72df4105955c/images/162d7e583c7e2fd03caac15c44bc5105.png |

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| **D.** |  /files/assess_files/cc3c5993-4e88-4742-8ad9-2eea6ab95975/images/e71e5d6cb22fae4760cb3202f5bf9db2.png |

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| **78.** | Tyler’s math class found that it would take /files/assess_files/8158554f-b6bb-4c3d-92bb-768e80c9c9bc/images/c2c5c1a50dc3132a5e7e50777f4661aa.png dollar bills to cover a square mile area. The surface area of the United States is about /files/assess_files/8158554f-b6bb-4c3d-92bb-768e80c9c9bc/images/83d34af9d502520b752e0068488de6e4.png square miles. About how many dollar bills are needed to cover the United States? |
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| **A.** | /files/assess_files/02d7d057-d9d9-472b-b150-93c845de7181/images/c34e7d33242b5ce3ca41f271b4ccbf28.png  |

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| **B.** | /files/assess_files/9d3b1e86-9082-4e65-a02e-f2a9d5815068/images/5197d0a73bc0921c09712edd806bb86d.png  |

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| **C.** | /files/assess_files/f3a7bb0f-49fa-4771-8eaf-f642c191d16f/images/dcecc05b540f94a8271265f73c96da66.png  |

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| **D.** | /files/assess_files/60fae645-1541-49d4-b27a-74bd46ff71a5/images/f0b940826f24544a5bef667dc47b51cf.png  |

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| **79.** | The area of the Pacific Ocean is 63,780,000 square miles. The Atlantic Ocean is /files/assess_files/089bfba1-76db-4e09-b909-54458af3dc8a/images/e533f587b3a2b63752971fa16fb7a51b.png square miles smaller than the Pacific Ocean. What is the area of the Atlantic Ocean written in scientific notation? |
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| **A.** | /files/assess_files/9e1615e7-4e13-4968-b313-c1ca61186455/images/5143396fff2c607843430c345f7f9411.png  |

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| **B.** | /files/assess_files/271137ee-3c95-4db8-ad62-25c5f7c9c766/images/7fb7817f61f4d8ffedfc1b6aa3818ed6.png  |

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| **C.** | /files/assess_files/e0f88642-a050-41c4-9b91-e967c5760b4b/images/d7ac87412436b831bfe489c65b080d15.png  |

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| **D.** | /files/assess_files/d0cf8ffb-9656-42e0-bd73-fcb29f122fe7/images/626ebf74a51b428b55b273c26cc8907e.png  |

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| **80.** | Derek’s science class is studying a species of whales known as right whales. An adult male right whale can reach a length of up to /files/assess_files/b14a1a22-82b8-45b4-8aaf-7cd312dc1ffb/images/17f4dc756e54f8d5f66460b78c6e40d3.png meters. Right whales are known to feed on plankton found in the ocean. A single plankton has an approximate length of /files/assess_files/b14a1a22-82b8-45b4-8aaf-7cd312dc1ffb/images/75d3a96d062ffedd8dd41264d9895bbf.png meters. One type of fish grows to a length that is 2.5 times greater than the plankton. About how many times longer is the male right whale than this type of fish? |
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| **A.** | /files/assess_files/875ae4c5-c160-4fd1-86c4-dadc48d47ef0/images/e6cf1730dbed4320b59cce82cac024f9.png |

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| **B.** | /files/assess_files/37fcc687-b0c0-4db6-987f-39b83568fe60/images/52d4becc79358eb7d81777eb672e56e1.png |

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| **C.** | /files/assess_files/c1b8a2d4-bc32-4a71-ad24-c4f89e9785a7/images/e7b14366b429c043e36b6a99e83f3d4c.png |

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| **D.** | /files/assess_files/5b9a34c7-ef46-46d7-98a8-f05ed970b864/images/c1acabe84f5ea68c80b78c81b6a40d42.png |

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| **81.** | The approximate mass of a hydrogen atom is /files/assess_files/1a543701-2ca9-402c-8b5a-3d8efc6f5418/images/2f0b86d4063fcd8e2f938d42e472fe84.png grams. The mass of a single lead atom is approximately /files/assess_files/1a543701-2ca9-402c-8b5a-3d8efc6f5418/images/6eedb779e9cd5f339692d8aef36e7e2c.png grams. How many times heavier is a lead atom than a hydrogen atom? |
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| **A.** | 5 times heavier |

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| **B.** | 20 times heavier |

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| **C.** | 50 times heavier |

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| **D.** | 200 times heavier |

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| **82.** | The diameter of Earth is approximately /files/assess_files/478a10fa-ad9b-4ce3-88c7-1238f9f917a8/images/fb120e096d11ae44a92d9b55ec68058f.png kilometers. The diameter of Jupiter is approximately /files/assess_files/478a10fa-ad9b-4ce3-88c7-1238f9f917a8/images/8d674fe410a9a6e43d3a6276bf0a1ea0.pngkilometers. Approximately how many times longer is the diameter of Jupiter than the diameter of Earth? |
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| **A.** | /files/assess_files/39c45589-1178-43fa-9fd7-1b7c2f7ca962/images/424184304ad93771f4dd4143548f0994.png |

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| **B.** | /files/assess_files/57a41987-3694-4bc0-9cb5-056e515f2f5e/images/139cb8abfdf729d7b369fa05af9da0d3.png |

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| **C.** | /files/assess_files/df42e90b-6985-4a56-93dc-b0b42dc49238/images/5f6f3d225e799188ee6e9526b931f7ef.png |

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| **D.** | /files/assess_files/43ea6c68-20e5-4929-bf98-5d5426e6e572/images/909c5d639f485e7f6e008d4b157fc91f.png |

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| **83.** | Which expression is equivalent to /files/assess_files/df1da40b-9fde-4599-8bd4-8faaa8b40369/images/20c81e671b41b044030306a2d5dd41d7.png |
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| **A.** | /files/assess_files/8d8fc043-437c-4114-8423-93e19b7c522f/images/edd59a870a45e1761765eb75829646b1.png |

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| **B.** | /files/assess_files/340cb9bd-d13d-4531-af9a-bca95db75bef/images/031e8be35ed6cdf8690597d1c9454d5d.png |

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| **C.** | /files/assess_files/58761f41-19b6-4a8b-8ec0-82a0ecb761f4/images/2d506162f85521e2f2cc83244dbfb2f1.png |

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| **D.** | /files/assess_files/89670d61-fda5-4294-a996-b72367369646/images/a57e5a16cbc88d48be5e178ed27f7026.png |

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| **84.** | The speed of light is approximately /files/assess_files/354b5fa8-8f82-4847-b95e-cc4278f40b87/images/f4d0e5729459b692dcb119c9618be0c8.png miles per hour. Approximately how many miles will a light signal travel in 0.14 hour? |
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| **A.** | /files/assess_files/08bc032f-f952-4307-ab48-b32b5aaf541c/images/b4116a621bacd7f62bc03ca211360d73.png |

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| **B.** | /files/assess_files/0bbc9a30-816e-4bbc-a1d2-a0699a9b2dc6/images/8ae48b8d089605fbba70ae4081dbeb71.png |

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| **C.** | /files/assess_files/6755e448-9afc-41c1-bfc2-73d038a19343/images/6dc2ca8979d762424abcfa3fb5a463e0.png |

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| **D.** | /files/assess_files/c5010220-ddc7-4498-b3bb-a8b6e9002e45/images/61ae5317fb0f34c9787a39699cdc11cc.png |

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| **85.** | A spaceship traveled at a speed of 5,000 miles per hour for 30,000 hours. How many miles, written in scientific notation, did this spaceship travel? |
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| **A.** | /files/assess_files/3c015021-61c2-4079-bd9d-694552345b1c/images/ca0970f0a9d069cc57ff7710ee244201.png |

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| **B.** | /files/assess_files/3f562aad-db0a-4c77-b76e-cd8383debaf1/images/a959b837c95e8d8fad37c8fd9f816982.png |

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| **C.** | /files/assess_files/b827d260-62e4-4bba-aab2-80c8e6b1cc9a/images/7476393666b9bc3a263aacf5cd125fe8.png |

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| **D.** | /files/assess_files/c9189177-d95e-444c-a9f6-83b6e104ac7c/images/1905b722aacdd359069677865d9a2800.png |

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| **86.** | The volume of the sun is approximately /files/assess_files/cc7dccf2-aedb-4151-b3f1-8c229c2d96c0/images/da47257663b71491014a2dafbf331d52.png How is this number expressed in scientific notation, to six significant digits? |
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| **A.** | /files/assess_files/95595ad3-6973-4a56-a0c7-a3661a6a396c/images/92ba33263ce40f0332252e11030b0595.png |

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| **B.** | /files/assess_files/269580d1-0965-49d8-8373-0a329fe754be/images/2a921fa92f437e1deac8d30de9914f9b.png |

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| **C.** | /files/assess_files/5b073fef-f2bb-4024-b883-e5e0b0bf0c65/images/9763ed9057129b78c4fa0323696d0c0a.png |

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| **D.** | /files/assess_files/d78cbaa0-c684-44a1-b2a1-7e2f848d7eab/images/d210e0df71bbd519942dc7c8ac73525c.png |

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| **87.** | Which number is equivalent to the value of the expression below? /files/assess_files/6d657568-aa01-45bc-b002-efb8e877a817/images/5e62a6c1e435af7843f00433dceee84e.png |
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| **A.** | /files/assess_files/0b829dd2-75d9-4670-b8ca-90012f21be14/images/1d8309f2696e0c878c96b4d719e180a6.png |

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| **B.** | /files/assess_files/7bdb500a-c625-4c01-88d3-cb9af43624e8/images/8414277e9e6a93b97cbe9d3f5d0950ef.png |

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| **C.** | /files/assess_files/24d25f3a-8cd8-43bd-a56b-c262f5eff2c4/images/be4143a86970d81e0fc225aec4161d25.png |

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| **D.** | /files/assess_files/c6d7d32f-a325-45b8-8e15-937ecf9b23af/images/fda6acb53440b176374feee5cd25787a.png |

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| **88.** | Alisha designs bracelets and sells them at the local farmers’ market. She sells her bracelets for $9.95 each. The revenue from selling *x* bracelets is represented by /files/assess_files/29a4a992-5790-4a5f-9daa-a3962fa69c84/images/8d27f947039c20dbbb28ba78f95eb561.png Alisha has to pay a $50 fee in order to sell at the farmers’ market. The cost to produce *x* bracelets is represented by /files/assess_files/29a4a992-5790-4a5f-9daa-a3962fa69c84/images/28669fec9aac35b2380ebf1c2bb2635d.png Which function represents Alisha’s profit,  /files/assess_files/29a4a992-5790-4a5f-9daa-a3962fa69c84/images/8a72fdb3eefdc98531473e662fabc369.png as a function of the number of bracelets sold, *x*? |
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| **A.** | /files/assess_files/b26defd6-a34f-4913-abfd-9e571ecf63cd/images/719d3200409fd812c3d6f25e4bfc3d8a.png |

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| **B.** | /files/assess_files/e94857c2-97da-484e-8bcf-b6ce8f829924/images/a46bfa416eca1e3cf99f8af3b1e2120a.png |

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| **C.** | /files/assess_files/eab64d3b-164a-4069-be7e-e117b2e56dd5/images/9b1c31a16741fd4ad9fe79d1d792ab0c.png |

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| **D.** | /files/assess_files/35a29a0f-2b93-4080-8d5c-8bf2402aab6e/images/8f0da55a683b8723cef3fa1981461c49.png |

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| **89.** | A pipe is filling a tank of water. The volume in liters that it can fill in *t* hours is given by the function /files/assess_files/57a24d5b-af96-489f-9ef0-cccfd4e1cb62/images/04a40ffa8b2a9c5dc32994771ed35622.png After the tank is filled with 50 liters of water, another pipe starts filling the tank at a rate modeled by the function /files/assess_files/57a24d5b-af96-489f-9ef0-cccfd4e1cb62/images/790568f76d98d8e89be1ad5292c8acf4.png along with the first pipe. Which function represents the volume of the tank after *t* hours, where /files/assess_files/57a24d5b-af96-489f-9ef0-cccfd4e1cb62/images/5822a38f58be818c5c46dda94e754612.png represents the time when the second pipe begins? |
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| **A.** | /files/assess_files/5ecba298-95ef-4f96-9e77-8893199c6996/images/c72e9005f2e79df3054c4f0dd20c4b89.png |

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| **B.** | /files/assess_files/6f28a839-54ff-44ab-beb2-517a5ffca3ba/images/baabb50e7e8beec453614dd7d3990db6.png |

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| **C.** | /files/assess_files/f524de5d-5947-4a2c-a39b-85e48efe77e4/images/4761f49c7dd7ad137d42543346806e08.png |

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| **D.** | /files/assess_files/9ced2dc1-473d-49f6-9da3-f545ed38acf4/images/adfa960b94ce574dee219fa726a32cd1.png |

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| **90.** | The account balance of Robin’s savings account *t* years after it was opened can be modeled by the function /files/assess_files/d75b8e4c-6538-47ae-896b-d8e0b0e419e0/images/274863c438b4dc77d883c32942d412bb.png Which function models the amount of interest he has earned after *t* years? |
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| **A.** | /files/assess_files/b8fe6771-5728-491e-b85d-ff65abf74f38/images/d966534adf3116e69405f647448d6d54.png |

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| **B.** | /files/assess_files/aefbaaad-bcc3-47fd-afdd-88a176c4f793/images/b3da4586f00ac117aaf3b6f2087575b4.png |

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| **C.** | /files/assess_files/ba2a8f7f-60ca-427b-9075-0b657d179fbd/images/60516e52af87eacf6f9df4a3e499f6ab.png |

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| **D.** | /files/assess_files/2af0341f-94de-4edc-b470-e1f410491596/images/17a5dcb86919d1727676585f5c3d2044.png |

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| **91.** | The ingredients for a particular kind of European chocolates cost $12 per box. The foil wrappers cost $0.05 per piece of chocolate. The box has *x* pieces of chocolates in it. Which function represents the total cost per piece of chocolate? |
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| **A.** | /files/assess_files/c4d6f1e8-3fb0-4b67-8477-1d218a6c8747/images/235ced53a97f2f8bb8a71278e40706b0.png |

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| **B.** | /files/assess_files/a59810fb-8c3b-4bcd-9845-9058c239acd2/images/5359d3c26409b08363554f59727e0699.png |

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| **C.** | /files/assess_files/4d7ea837-7f2e-4b6a-8b15-f2b758e49504/images/6fb816bda35943260724800dc84e3d85.png |

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| **D.** | /files/assess_files/68df8ae9-37c1-4f40-a4cc-b366c351af44/images/a2ec3d267df40e66892aa991d6872978.png |

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| **92.** | /files/assess_files/fbb87aa5-991a-41f9-91c2-c7f5902d565c/images/832e3c2ff3a65d5f55e9391bebff8326.png |
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| **A.** | /files/assess_files/d010cdb8-b08d-4d44-884e-70e36337fbf8/images/f8cf54a2ede97b132d49c29cd6209c2b.png |

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| **B.** | /files/assess_files/5d0f8cba-3803-4d4a-bf77-875772aaba7f/images/309b6ed6fcad1a0f0637c854b495c118.png |

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| **C.** | /files/assess_files/1e70542f-f2a0-4d33-be63-ab59908c41b7/images/cf96d2f295c60ddf82daa729f7daf075.png |

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| **D.** | /files/assess_files/19e7b1ec-4c13-4323-ba08-e3822460e9da/images/d7cfefa18029d7ce350066d1c055b59f.png |

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| **93.** | A scientist observes the growth of two types of bacteria, A and B. He notes that every hour, the number of bacteria A doubles while the number of bacteria B increases by 500. The scientist begins the experiment with *x* number of bacteria A and *x* number of bacteria B. Which function models the total number of bacteria after 3 hours? |
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| **A.** | /files/assess_files/41f7a386-7b8d-41e3-a255-35cbb9668f1b/images/48afb6b9927248594c7393c6755d6096.png |

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| **B.** | /files/assess_files/6973ab80-3026-4675-896b-645fc7ffd8d8/images/09ec450d44cdcafffe48a6391f077282.png |

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| **C.** | /files/assess_files/6a08aba6-2a3c-49ab-ab89-807394bc7a1f/images/d44cd85d627b15f6442ed3486c3ede3e.png |

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| **D.** | /files/assess_files/6edbe2ac-13cf-4dbc-9cb1-2fa6258f51fc/images/14873589fbd86718dd3a8285eda177b5.png |

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