|  |  |
| --- | --- |
| 1 | Which number is equivalent to 0.00000607 in scientific notation? |
|  |
|  | A | 6.07 x $10^{6}$ |
|  | B | 6.07 x $10^{-6}$ |
|  | C | 6.07 x $10^{5}$ |
|  | D | 6.07 x $10^{-5}$ |
|  |  |  |
| 2 | Simplify ($4^{-4}$)($4^{2}$) |
|  |
|  | A | $4^{-8}$  |
|  | B | $16^{-8}$  |
|  | C | $\frac{1}{16}$  |
|  | D | $\frac{1}{2}$  |
|  |  |  |
| 3 | Which is the standard numeral for $3^{0}$ + $3^{1}$ + $3^{-2}$ ? |
|  |
|  | A | 3$\frac{1}{9}$ |
|  | B | -3 |
|  | C | -6 |
|  | D | 4$\frac{1}{9}$ |
| 4 | Solve for *x*: $\frac{14^{x}}{14^{4}}$ =$14^{8}$ |
|  |
|  | A | 32 |
|  | B | 4 |
|  | C | 12 |
|  | D | 18 |
| 5 | Alaska is the largest state in the United States with an area of 1.8 x $10^{6}$ square kilometers. Rhode Island is the smallest state with an area about 2950 square kilometers. About how many times larger is Alaska than Rhode Island? |
|  |
|  | A | 6 |
|  | B | 60 |
|  | C | 600 |
|  | D | 6000 |
|  |  |  |
| 6 | Simplify $x^{3}$ = $\frac{1}{8}$ |
|  |
|  | A | $\frac{1}{24}$  |
|  | B | $\frac{1}{4}$  |
|  | C | $\frac{1}{2}$  |
|  | D | $\frac{3}{8}$  |
|  |  |  |
| 7 | What is half of $2^{6}$ ? |
|  |
|  | A | $1^{3}$  |
|  | B | $1^{6}$  |
|  | C | $2^{3}$  |
|  | D | $2^{5}$  |
|  |  |  |
| 8 | Jacob is buying bags of grass seed. A bag will cover 800 square feet of lawn. Estimate the length of the largest square Jacob could seed if he purchases 6 bags of seed? |
|  |
|  | A | 48 |
|  | B | 57 |
|  | C | 69 |
|  | D | 4800 |
|  |  |  |
| 9 | Express $\frac{9.6 × 10^{-11}}{2.4 × 10^{8}}$ in scientific notation. |
|  |
|  | A | 4 x $10^{-3}$ |
|  | B | 4 x $10^{3}$ |
|  | C | 4 x $10^{-19}$ |
|  | D | 4 x $10^{19}$ |
|  |  |  |
| 10 | The volume of a cube is 169 $cm^{3}$.Estimate the length of a side of the cube to the nearest tenth? |
|  |
|  | A | 13.0 cm. |
|  | B | 5.6 cm. |
|  | C | 5.56 cm. |
|  | D | 507.0 cm. |
|  |  |  |
| 11 | What is the value of ($\frac{3^{3}}{3^{-1}}$)° |
|  |
|  | A | 0 |
|  | B | 1 |
|  | C | 9 |
|  | D | 27 |
|  |  |  |
| 12 | Solve for *X*: $\sqrt[3]{x}$ = 5 |
|  |
|  | A | 5 |
|  | B | 25 |
|  | C | 125 |
|  | D | -125 |
|  |  |  |
| 13 | About 3.0 x $10^{6}$ metric tons of cocoa are produced each year in the world. Of this 1.5 x $10^{5 }$metric tons are produced in Brazil. About how many metric tons of cocoa are produced in the rest of the world? |
|  |
|  | A | 1.5 x $10^{1}$ |
|  | B | 2.85 x $10^{6}$ |
|  | C | 3.15 x $10^{6}$ |
|  | D | 4.5 x $10^{11}$ |
|  |  |  |
| 14 | Simplify $x^{3}$ = -343 |
|  |
|  | A | $\sqrt[3]{7}$  |
|  | B | -7 |
|  | C | 7 |
|  | D | ± 7 |
|  |  |  |
| 15 | Multiply (4.6 x $10^{6}$) x (2.9 x $10^{3}$).  |
|  |
|  | A | 13.34 x $10^{9}$ |
|  | B | 13.34 x $10^{18}$ |
|  | C | 1.334 x $10^{10}$ |
|  | D | 1.334 x $10^{18}$ |
|  |  |  |
| 16 | What is 3.06 x $10^{4}$ in standard form? |
|  |
|  | A | 306 |
|  | B | 3,060 |
|  | C | 30,600 |
|  | D | 306,000 |
|  |  |  |
| 17 | Which is the best estimate of $e^{3}$ ? |
|  |
|  | A | 27.3 |
|  | B | 20.1 |
|  | C | 18.6 |
|  | D | 31.0 |
|  |  |  |
| 18 | The $\sqrt{39}$ is closest to what integer? |
|  |
|  | A | 5 |
|  | B | 6 |
|  | C | 7 |
|  | D | 8 |
|  |  |  |
| 19 | Approximate $\sqrt{3}$ + $\sqrt{7}$ to the nearest tenth. |
|  |
|  | A | 4.1 |
|  | B | 4.2 |
|  | C | 4.3 |
|  | D | 4.4 |
|  |  |  |
| 20 | Which of the following is a rational number? |
|  |
|  | A | π |
|  | B | 2e |
|  | C | $\sqrt{\frac{9}{16}}$  |
|  | D | $\sqrt{24}$  |
|  |  | Extended Response Question |
| 21 | One cubic millimeter of Ms. Smith’s blood contains about 8,000,000 red blood cells. There are about 7,300,000 cubic millimeters of blood in her entire body. Use your calculator to determine approximately how many red blood cells Ms. Smith has in total. Write your final answer in scientific notation. (Show all work.) |
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|  |  |
|  | Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |  |
|  |
|  | A |  |
|  | B |  |
|  | C |  |
|  | D |  |
|  |  |  |