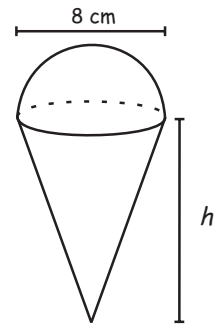




Warm-Up 14

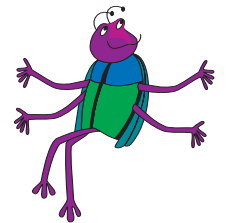
- _____ digits How many digits would the integer A have if A is the product of 3,045,213,999,654 and 317,065,213,369,215?
- _____ What positive two-digit integer is equal to twice the product of its digits?
- _____ What is the arithmetic mean of the arithmetic means of each of the five sets $\{1\}$, $\{2,3\}$, $\{4,5,6\}$, $\{7,8,9,10\}$ and $\{11,12,13,14,15\}$?

- _____ cm An ice cream cone is packed full of ice cream. A hemisphere of ice cream is then placed on top, as shown. The diameter of both the hemisphere of ice cream and the top of the cone is 8 cm. If the volume of ice cream inside the cone is the same as the volume of ice cream outside the cone, what is the height, h , of the cone?

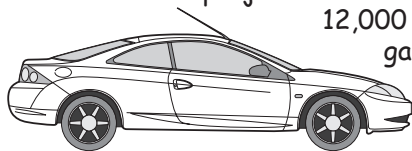


- _____ cents Matt bought three 16-ounce cans of corn at \$1.20 per can rather than four 12-ounce cans at \$0.95 per can. How much money, in cents, did he save per ounce? Express your answer as a common fraction.

- _____ meters A beetle starts at the corner of a square that measures 12 meters on each side. The beetle heads 10 meters along the diagonal, turns 45 degrees, and travels 2 more meters. How much closer to the nearest side of the square is the beetle than to the second nearest side?



- \$ _____ A car dealer in Yokeland advertises that customers who buy a new car will pay \$3.99 per gallon of gas for the next three years. Gas prices in Yokeland are projected to be \$5 per gallon for the next three years. If Dora drives 12,000 miles annually, and the car she buys gets 30 miles per gallon, then how much will the car dealership have to pay for this promotion for Dora?



- _____ marbles A bag contains 10 marbles. Each marble is either green or blue, and there are at least two marbles of each color. When three marbles are drawn without replacement the probability that all of them are green is the same as the probability that exactly one of them is blue. How many of the 10 marbles are blue?
- _____ A particular right prism has a regular octagonal base. Its base edges are 4 cm each and its height is 3 cm. Its volume can be expressed in the form $a(b + \sqrt{c})$ cubic cm and c is not divisible by the square of a prime. What is the value of $a + b + c$?
- _____ Given that $\frac{a}{b} = \frac{3}{2}$, $\frac{b}{c} = \frac{5}{4}$, and $\frac{c}{d} = \frac{7}{6}$, what is the value of $\frac{16a + d}{6c + d}$? Express your answer as a common fraction.