




# Warm-Up 13



1. \$ \_\_\_\_\_ Maurice and Trisha want to buy a house. The bank requires a 10% down payment and a combined annual income of at least  $\frac{1}{3}$  of the remaining amount to qualify for the loan. Based on their combined annual income of \$63,000 a year, what is the price of the most expensive house the bank will allow them to buy?
2. \_\_\_\_\_ What is the value of  $(121^{0.41})(121^{0.09})$ ?
3. \_\_\_\_\_ sq units What is the area of the region enclosed by the lines  $y = \frac{1}{3}x - 10$ ,  $y = \frac{-7}{6}x - 10$  and  $y = 4$ ?
4. \_\_\_\_\_ cm A plane parallel to the base of a right, square pyramid divides the pyramid into a smaller pyramid and a frustum that have equal volumes. If the height of the smaller pyramid is 6 cm, what is the height, in centimeters, of the original pyramid? Express your answer in simplest radical form.
5. \_\_\_\_\_ Alice eats  $\frac{1}{3}$  of a pizza. Ben then eats  $\frac{1}{2}$  of the remaining pizza. Christa then eats  $\frac{1}{4}$  of the remaining pizza. What fraction of the pizza remains after Christa eats her portion? Express your answer as a common fraction.
6. \_\_\_\_\_ Each of five questions on a multiple choice test has four answer choices. If a student selects an answer at random for each of the five questions, what is the probability of choosing at least three correct answers? Express your answer as a common fraction.
7. \_\_\_\_\_ points Including its endpoints, how many points  $(c, d)$ , where both  $c$  and  $d$  are integers, are on the line segment joining the points  $(0, 60)$  and  $(100, 0)$ ?
8. \_\_\_\_\_ hours  Georgia lives three miles from the bank of a straight river. Her friend Caleigh lives two miles from the river, on the same side, but 12 miles upstream. Georgia must get some water from the river and then go to Caleigh's house. If Georgia jogs from her house to the river bank and then to Caleigh's house at a rate of five miles per hour, what is the least amount of time required? Express your answer as a mixed number.
9. \_\_\_\_\_ The positive square root of  $16 + 4\sqrt{15}$  can be expressed in the form  $\sqrt{j} + \sqrt{k}$ , where  $j$  and  $k$  are natural numbers with  $j > k$ . What is the value of  $j - k$ ?
10. \_\_\_\_\_ units In isosceles trapezoid ABCD, legs AD and BC are each 5 units. Diagonal AC is 12 units and is perpendicular to leg AD. What is the length of segment AB expressed as a mixed number?