

1. What is the value of  $\frac{1}{2} \cdot \frac{2}{3} \cdot \frac{3}{4} \cdot \frac{4}{5} \cdot \frac{5}{6} \cdot \frac{6}{7} \cdot \frac{7}{8} \cdot \frac{8}{9} \cdot \frac{9}{10}$ ? Express your answer as a common fraction.

1. \_\_\_\_\_

2. Four workers can build a stage in 10 eight-hour days. At the same rate, how many workers will it take to build the stage in 5 eight-hour days?

2. \_\_\_\_\_ workers

3. Keisha's basketball team must decide on a new uniform. The seventh-graders will pick the color of the shorts (black or gold) and the eighth-graders will pick the color of the jersey (black, white or gold), but the two groups of players will not confer together. If, for both garments, each possible color is equally likely to be chosen, what is the probability that the shorts will be a different color than the jersey? Express your answer as a common fraction.

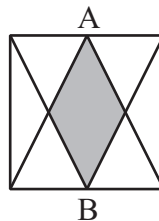


3. \_\_\_\_\_

4. Billy purchased 100 shirts at a cost of \$15 each and planned to resell them. The first week he sold some of them for \$25 each. The second week he sold the rest for \$20 each. If his total profit was \$600, how many shirts did he sell the first week?

4. \_\_\_\_\_ shirts

5. An 8-cm-by-8-cm square is partitioned as shown. Points A and B are the midpoints of two opposite sides of the square. What is the area of the shaded region?



5. \_\_\_\_\_ sq cm

6. A rectangular picture frame is made from one-inch-wide pieces of wood. The area of just the frame is 18 square inches, and one of the outer edges of the frame is 5 inches long. What is the sum of the lengths of the four interior edges of the frame?



6. \_\_\_\_\_ inches

7. A large sphere has a volume of  $288\pi$  cubic units. A smaller sphere has a volume which is 12.5% of the volume of the larger sphere. What is the ratio of the radius of the smaller sphere to the radius of the larger sphere? Express your answer as a common fraction.

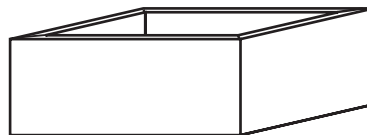
7. \_\_\_\_\_

8. Mrs. Riley recorded this information from a recent test taken by all of her students. Using the data, what was the average percent score for these 100 students?

% Score	Number of Students
100	7
90	18
80	35
70	25
60	10
50	3
40	2

8. \_\_\_\_\_ %

9. A wood, rectangular box, with no top, is constructed with five panels that are each one centimeter thick. The external dimensions of the base are 16 cm by 24 cm, and the external height is 10 cm. When the box is totally submersed in paint, how many square cm of painted surface will there be?



9. \_\_\_\_\_ sq cm

10. A lattice point is a point whose coordinates are both integers. How many lattice points are on the boundary or inside the region bounded by the  $x$ -axis, the line  $x = 4$  and the curve  $y = 2\sqrt{x}$ ?

10. \_\_\_\_\_ lattice points