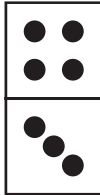


# Workout 9

- sq units In trapezoid ABCD, bases AB and CD are 13 and 39 units, respectively. Legs BC and DA are 24 and 10 units, respectively, and sides BC and DA lie on lines that are perpendicular to each other. What is the area of ABCD?
- minutes An airplane started 8 miles south and 4 miles west of a radar station. The airplane travels due northeast at a speed of 3 miles per minute. In how many minutes is it again the same distance from the radar station as it started? Express your answer as a decimal to the nearest hundredth.
- students On a 100-point test only three students had scores of 90 or above, and those scores were 97, 94 and 91. Exactly one student had a score of 59 and that was the lowest score. No score occurred more than two times. At least how many students must have had scores of 70 or above if the total of all the scores was 2431?
- \_\_\_\_\_ What is the value of the sum  $(1 \cdot 1 + 2 \cdot 3 + 3 \cdot 5 + \dots + 100 \cdot 199) + (1 \cdot 3 + 2 \cdot 5 + 3 \cdot 7 + \dots + 100 \cdot 201)$ ? The first sum is of products of the form  $(n)(2n - 1)$ , and the second sum is of products of the form  $(n)(2n + 1)$ , with  $n$  in each case going from 1 to 100.
- \_\_\_\_\_ What is the largest possible difference between the square of a three-digit integer and the square of the three-digit integer formed by reversing the digits of the original integer?
- cylinders Nicole needs to pour a cubic meter of water into cylinders that are each 1 meter tall and  $\frac{1}{3}$  meter in diameter. How many cylinders does she need?
- units Convex quadrilateral ABCD has perpendicular diagonals. If  $AB = 25$ ,  $BC = 39$  and  $CD = 60$  units, what is the length of segment DA?
- sq units What is the area of the circle that passes through  $A(-8, 0)$ ,  $B(0, 8)$  and  $C(12, 0)$ ? Express your answer in terms of  $\pi$ .
- \_\_\_\_\_ A set of dominoes consists of exactly one domino with every possible pair of integers  $(x, y)$  with  $0 \leq x \leq y \leq 6$ . What is the sum of all the integers in the set of dominoes?
- integers How many positive integers less than or equal to 50 are multiples of 3 or 4, but not 5?