

8. The price of ground coffee beans is d dollars for 8 ounces and each ounce makes c cups of brewed coffee. In terms of c and d , what is the dollar cost of the ground coffee beans required to make 1 cup of brewed coffee?

(A) $\frac{d}{8c}$

(B) $\frac{cd}{8}$

(C) $\frac{8c}{d}$

(D) $\frac{8d}{c}$

(E) $8cd$

15. If $x^2 - y^2 = 10$ and $x + y = 5$, what is the value of $x - y$?

17. For all positive integers j and k , let $j \boxed{R} k$ be defined as the whole number remainder when j is divided by k . If $13 \boxed{R} k = 2$, what is the value of k ?

18. The average (arithmetic mean) of the test scores of a class of p students is 70, and the average of the test scores of a class of n students is 92. When the scores of both classes are combined, the average score is 86.

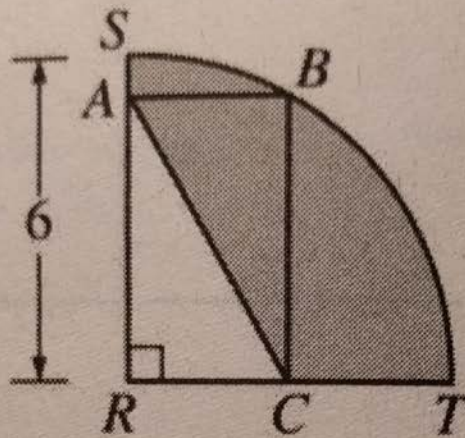
What is the value of $\frac{p}{n}$?

17. Luke purchased an automobile for \$5,000, and the value of the automobile decreases by 20 percent each year. The value, in dollars, of the automobile n years from the date of purchase is given by the function V , where $V(n) = 5000\left(\frac{4}{5}\right)^n$. How many years from the date of purchase will the value of the automobile be \$3,200 ?

- (A) One
- (B) Two
- (C) Three
- (D) Four
- (E) Five

19. In a set of eleven different numbers, which of the following CANNOT affect the value of the median?

- (A) Doubling each number
- (B) Increasing each number by 10
- (C) Increasing the smallest number only
- (D) Decreasing the largest number only
- (E) Increasing the largest number only



20. In the figure above, arc SBT is one quarter of a circle with center R and radius 6. If the length plus the width of rectangle $ABCR$ is 8, then the perimeter of the shaded region is

- (A) $8 + 3\pi$
- (B) $10 + 3\pi$
- (C) $14 + 3\pi$
- (D) $1 + 6\pi$
- (E) $12 + 6\pi$

$$g(n) = n^2 + n$$

$$h(n) = n^2 - n$$

14. Which of the following is equivalent to $h(m + 1)$?

(A) $g(m)$

(B) $g(m) + 1$

(C) $g(m) - 1$

(D) $h(m) + 1$

(E) $h(m) - 1$

15. A store charges \$28 for a certain type of sweater. This price is 40 percent more than the amount it costs the store to buy one of these sweaters. At an end-of-season sale, store employees can purchase any remaining sweaters at 30 percent off the store's cost. How much would it cost an employee to purchase a sweater of this type at this sale?

- (A) \$8.40
- (B) \$14.00
- (C) \$19.60
- (D) \$20.00
- (E) \$25.20

16. In rectangle $ABCD$, point E is the midpoint of \overline{BC} .
If the area of quadrilateral $ABED$ is $\frac{2}{3}$, what is the
area of rectangle $ABCD$?

(A) $\frac{1}{2}$

(B) $\frac{3}{4}$

(C) $\frac{8}{9}$

(D) 1

(E) $\frac{8}{3}$

