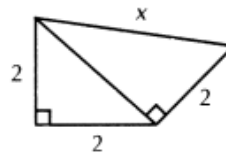


Math Level 1 SAT Practice Test 17

- If $x = (b + 3)^2$ and $b = -4$, then $x =$
(A) -49
(B) -1
(C) 0
(D) 1
(E) 49
- If $f(x) = 4x - 1$ and $1 < x < 3$, then which of the following defines all and only the possible values of $f(x)$?
(A) $-3 < f(x) < 12$
(B) $3 < f(x) < 11$
(C) $3 < f(x) < 12$
(D) $4 < f(x) < 11$
(E) $5 < f(x) < 11$
- If $\frac{5}{k+4} = \frac{7}{k+6}$ then $k =$
(A) $\frac{24}{35}$
(B) $\frac{9}{13}$
(C) $\frac{2}{3}$
(D) 1
(E) 2

- The average cost of 13 items in a display case is \$12. After one of the items is removed, the average cost of the remaining 12 items is \$11. The cost of the item removed is
(A) \$1.00
(B) \$11
(C) \$12
(D) \$13
(E) \$24



- In the figure above, what is the value of x ?
(A) 2.83
(B) 3.46
(C) 4
(D) 4.25
(E) 5
- If $\sqrt[3]{x-2} + .75 = 0$ then $x =$
(A) -2.24
(B) -1.44
(C) 1.76
(D) 1.85
(E) 2.56

7. What is the length of the line segment between the points $(-2, -3)$ and $(-4, 4)$?

(A) 1.41
 (B) 3.16
 (C) 4.47
 (D) 7.07
 (E) 7.62

8. In Figure 1, if $RT = 2\frac{1}{4}$ then $RS =$

(A) $\frac{3}{4}$
 (B) $\frac{11}{12}$
 (C) $\frac{5}{4}$
 (D) $\frac{19}{12}$
 (E) $\frac{5}{4}$

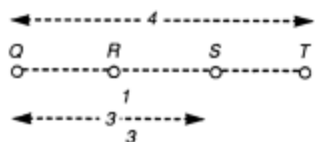


Figure 1

9. In Figure 2, which of the following points falls within the shaded area?

(A) $(5, 0)$
 (B) $(5, 1)$
 (C) $(4, 2)$
 (D) $(4, 3)$
 (E) $(3, 4)$

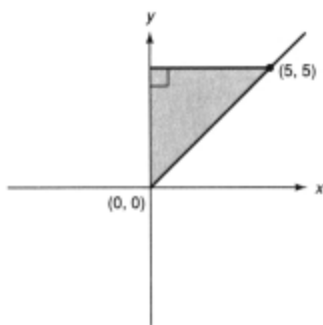


Figure 2

10. If $4 < x < 12$ and $6 < y < 8$, then which of the following must be true?

(A) $\frac{2}{3} < xy < \frac{3}{2}$
 (B) $2 < xy < 4$
 (C) $6 < xy < 12$
 (D) $24 < xy < 96$
 (E) $32 < xy < 72$

11. In Figure 3, three equilateral triangles have a common vertex. $x + y + z =$

(A) 270
 (B) 180
 (C) 120
 (D) 90
 (E) 60

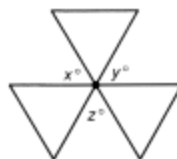


Figure 3

12. If the operation ϕ is defined for all real numbers x and y by the equation $x \phi y = xy - y - x$, then $-2 \phi -1 =$

(A) -3
 (B) -2
 (C) 1
 (D) 3
 (E) 5

13. In Figure 4, if the circle has a radius of 3, what is the length of minor arc PR ?

- (A) $\frac{\pi}{6}$
 (B) $\frac{\pi}{3}$
 (C) π
 (D) $\frac{3\pi}{2}$
 (E) 3π

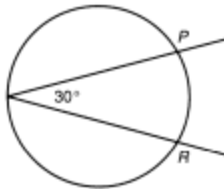


Figure 4

14. What is the slope of the line perpendicular to the line whose equation is $x\sqrt{7} + y\sqrt{5} = 1$?

- (A) 1.41
 (B) 1.18
 (C) .85
 (D) .53
 (E) .21

15. The number $(73)^{36}$ has how many digits when multiplied out?

- (A) 12
 (B) 36
 (C) 37
 (D) 67
 (E) 68

16. What is the least positive integer x for which $12 - x$ and $15 - x$ will be non-zero and have opposite signs?

- (A) 3
 (B) 4
 (C) 7
 (D) 11
 (E) 13

17. The solution set to the pair of equations:

$$mx + ny = 15$$

$$nx + my = 13$$

is $x = 3$ and $y = 1$. What are the values of m and n ?

- (A) $m = 5$
 $n = 3$
 (B) $m = 4$
 $n = 3$
 (C) $m = 3$
 $n = 4$
 (D) $m = 3$
 $n = 5$
 (E) $m = 2$
 $n = 6$

18. The lengths of the sides of quadrilateral Q are all integers. If three of the sides have lengths of 3, 4, and 5, then the maximum length of the fourth side is

- (A) 13
 (B) 12
 (C) 11
 (D) 7
 (E) 2

19. In Figure 5, if ABD is a right isosceles triangle, then $x =$

- (A) 25
 (B) 30
 (C) $37\frac{1}{2}$
 (D) 45
 (E) 60

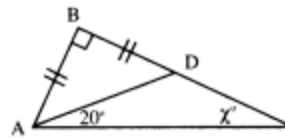


Figure 5

1. D 2. B 3. D 4. E 5. B 6. C 7. D 8. D 9. E 10. D 11. B 12. E 13. C 14. C 15. E 16. E 17. B 18. C 19. A