SAT Hards (from older SAT tests) - Test 5

18. If the average (arithmetic mean) of x and y is k, which of the following is the average of x, y, and z?

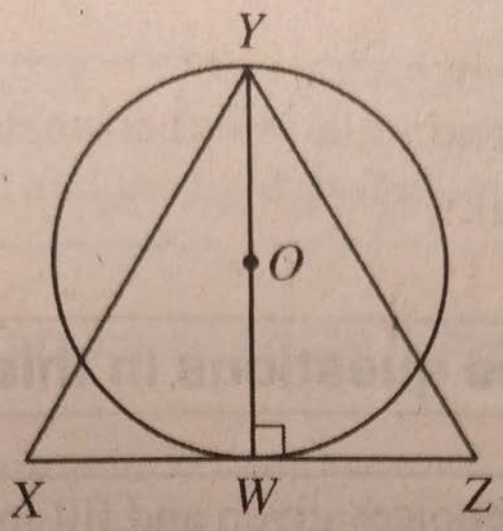
(A) $\frac{2k + z}{3}$

(B) $\frac{2k + z}{2}$

(C) $\frac{k + z}{3}$

(D) $\frac{k + z}{2}$

(E) $\frac{2(k + z)}{3}$



19. In the figure above, $\triangle XYZ$ is equilateral, with side of length 2. If WY is a diameter of the circle with center O, then the area of the circle is

(A) $\frac{\sqrt{3\pi}}{4}$

(B) $\frac{2\pi}{3}$

(C) $\frac{3\pi}{4}$

(D) π

(E) $\frac{3\pi}{2}$

20. When 15 is divided by the positive integer k, the remainder is 3. For how many different values of k is this true?

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

6. If m and k are positive and $10m^2k^{-1} = 100m$, what is m^{-1} in terms of k ?

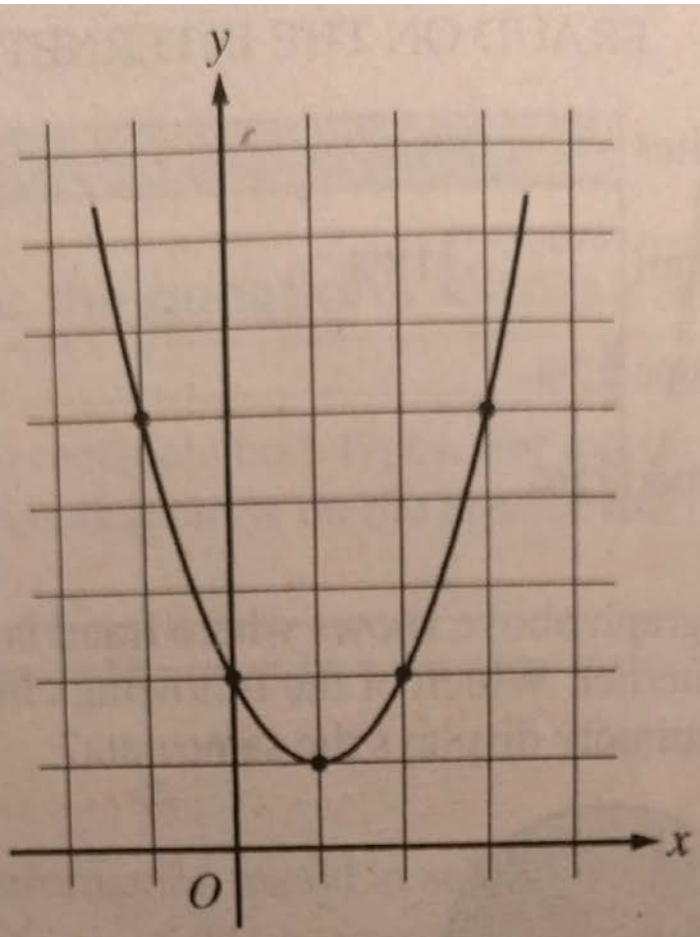
(A) $\frac{k}{10}$

(B) $\frac{k}{90}$

(C) $\frac{\sqrt{k}}{10}$

(D) $\frac{1}{10k}$

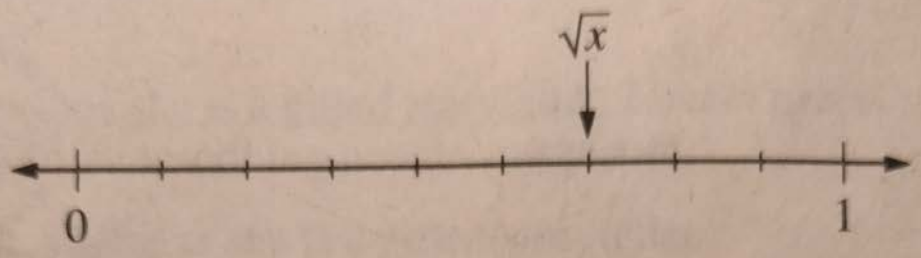
(E) $\frac{1}{90k}$



8. The figure above shows the graph of a quadratic function f that has a minimum at the point $(1, 1)$. If $f(b) = f(3)$, which of the following could be the value of b?

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

16. If $a + 2b$ is equal to 125 percent of $4b$, what is the value of $\frac{a}{b}$?



17. On the number line above, there are 9 equal intervals between 0 and 1. What is the value of x ?

18. In the xy-coordinate plane, the distance between point $B(10, 18)$ and point $A(x, 3)$ is 17. What is one possible value of x ?