1. If $7x < 2y$ and $2y < 9z$, which of the following statements is true?
   a. $7x < 9z$  b. $9z < 7x$  c. $z < x$  d. $7x = 9z$  e. $7x + 1 = 9z$

2. If $f(t) = 5t - 15$, then at what value of $t$ does the graph of $f(t)$ cross the $x$-axis?
   a. $-15$  b. $-5$  c. $0$  d. $2$  e. $3$

3. If $p^5 + 3 = p^5 + w$, then $w = \ ?$
   a. $-3$  b. $-3\sqrt{3}$  c. $3\sqrt{3}$  d. $3$  e. $3^5$

4. For all positive numbers $j$ and $k$, let $j \nabla k$ be defined as $\frac{j + 4k}{j - 4k}$. What is the value of $1018 \nabla 4.5$?
   a. $1.036$  b. $10.36$  c. $103.6$  d. $1036$  e. $10360$

5. If a number is rounded to 26.7, which of the following values could have been the original number?
   a. 26  b. 26.605  c. 26.655  d. 26.776  e. 27

6. On a coordinate plane, the center of a circle is at $(9, -2)$. If the circle touches the $y$-axis in only one point, what is the radius of the circle?

7. The figure at right shows three squares with sides of length 6, 8, and $k$, respectively. If points $A$, $B$, and $C$ lie on line $l$, what is the value of $k$?

8. Exactly 875 out of 7000 seniors at college are majoring in mathematics. What percent of seniors are NOT majoring in mathematics?

9. Five SnookerBars cost as much as 2 Sodiepop Swirls. If the cost of one Sodiepop Swirl and one SnookerBar is $1.75, what is the cost in dollars of 1 Sodiepop Swirl?

10. The highest score possible on Professor Snape’s test is 100 and the lowest is 0. Harry, Ron, Hermione, and Neville’s tests had an average of 86. If Neville got the lowest score, what is the lowest possible score he could have gotten?

Answers

6. 9  7. $\frac{32}{3}$  8. 87.5%  9. $1.25$  10. 4