Quiz 1 Distance and Midpoint

Find the distance between points \( P(8, 2) \) and \( Q(3, 8) \) to the nearest tenth.

A 11  
B 7.8  
C 61  
D 14.9

A high school soccer team is going to Columbus, Ohio to see a professional soccer game. A coordinate grid is superimposed on a highway map of Ohio. The high school is at point \( (3, 4) \) and the stadium in Columbus is at point \( (7, 1) \). The map shows a highway rest stop halfway between the high school and the stadium. What are the coordinates of the rest stop? What is the approximate distance between the high school and the stadium? (One unit is approximately equal to 6.4 miles.)

A \( \left( \frac{5}{2}, \frac{5}{2} \right) \), 5 miles  
B \( \left( \frac{3}{2}, \frac{5}{2} \right) \), 160 miles  
C \( \left( \frac{5}{2}, \frac{5}{2} \right) \), 32 miles  
D \( \left( \frac{3}{2}, \frac{5}{2} \right) \), 16 miles

Noam walks home from school by walking 8 blocks north and then 6 blocks east. How much shorter would his walk be if there were a direct path from the school to his house? Assume that the blocks are square.

A 14 blocks  
B 10 blocks  
C 4 blocks  
D The distance would be the same.
4. Each unit on the map represents 5 miles. What is the actual distance from Oceanfront to Seaside?

A. about 10 miles  
B. about 50 miles  
C. about 8 miles  
D. about 40 miles

5. Find the midpoint of the segment.

A. (–3, –1)  
B. (–2, 0)  
C. (–2, –1)  
D. (–3, 0)
6  \( M \) is the midpoint of the segment: \( \overline{CF} \)

Use the coordinates \( C(3, 4) \) and \( F(9, 8) \) to find the length below. \( \overline{MF} \)

A  \( \sqrt{13} \)
B  \( 2\sqrt{13} \)
C  26
D  13

7  Find the perimeter of the triangle with vertices \( A(-5, -2), B(-2, -2) \), and \( C(-5, 2) \).

A  12 units
B  7 units
C  32 units
D  14 units
8. On the coordinate plane below, what is the midpoint of \( CD \)?

![Coordinate Plane Diagram]

A. \((6, 4.5)\)  
B. \((-4, 6.5)\)  
C. \((-6, 4.5)\)  
D. \((-3, 6.5)\)

9. What is the distance between the two points in simplest radical form?
\( R(-8, -3) \) and \( S(-1, -4) \)

A. 7  
B. \(4 \sqrt{3}\)  
C. \(5 \sqrt{2}\)  
D. \(2 \sqrt{65}\)

10. What is the distance between the two points in simplest radical form?
\( P(2, 8) \) and \( B(1, 3) \)

A. \(\sqrt{130}\)  
B. \(\sqrt{26}\)  
C. 6  
D. \(2 \sqrt{13}\)

11. An equilateral triangle has a side length 8 in. What is the sum of the distances from a point \( A \) inside the triangle to the sides of the triangle?

A. 8 in.  
B. 13.9 in.  
C. 24 in.  
D. 6.9 in.
12. Find the coordinates of the midpoint of the segment whose endpoints are $H(8, 2)$ and $K(6, 10)$.

A. (14, 12)  
B. (1, 4)  
C. (7, 6)  
D. (2, 8)

13. $M(9, 8)$ is the midpoint of $\overline{SR}$. The coordinates of $S$ are (10, 10). What are the coordinates of $R$?

A. (9.5, 9)  
B. (11, 12)  
C. (18, 16)  
D. (8, 6)

14. Find the midpoint of $\overline{AE}$.

A. (3, 1)  
B. (1, 1)  
C. (10, 4)  
D. (4, 4)

15. Find the distance between (3, 4) and (4, –6). If necessary, round to the nearest tenth.

A. 2 units  
B. 10 units  
C. 7.3 units  
D. 53 units
16. The Frostburg-Truth bus travels from Frostburg Mall through the City Center to Sojourner Truth Park. The mall is 3 miles west and 2 miles south of the City Center. Truth Park is 4 miles east and 5 miles north of the Center. How far is it from Truth Park to the Mall to the nearest tenth of a mile?

A 3.6 miles  
B 9.9 miles  
C 3.2 miles  
D 6.4 miles

17. Find the perimeter of \( \triangle ABC \) with vertices \( A(0, -6), B(4, -6), \) and \( C(0, -3) \).

A 32 units  
B 14 units  
C 12 units  
D 7 units

18. \( \overline{AB} \) has endpoints at \(-2\) and \(12\). What is the coordinate of its midpoint?

A 7  
B 5  
C 6  
D 4
19. The midpoint of $\overline{CD}$ is $E(-1, 0)$. One endpoint is $C(5, 2)$. What are the coordinates of the other endpoint?

![Graph with points C and D]

A $D(-7, -2)$  
B $D(-2, -7)$  
C $D(-5, -2)$  
D $D(2, 5)$

20. What is the distance between $P(-4, 3)$ and $Q(6, 1)$? Round to the nearest tenth.

A 9.8  
B 4.5  
C 10.2  
D 3.5