

Straight Line Graphs – Section Test

1. Here are four straight-line equations.

$$\begin{array}{ll} 1 & 3y = 4x + 5 \\ 2 & 4y = 3x - 1 \\ 3 & 4y + 3x = 7 \\ 4 & 4x + 3y = 2 \end{array}$$

Which lines are perpendicular? Write your answers in ascending order.

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Lines and are perpendicular

Questions 2 – 4 are about the points $P(4, -2)$ and $Q(-3, -5)$.

2. The length PQ is given by $\sqrt{a}$
What is the value for a ?

3. What is the midpoint of PQ ?
Give your answers as exact decimals.

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4. The point S lies on PQ and is such that $PS:SQ = 3:2$.
What are the coordinates of S ?
Give your answers as exact decimals.

$(\text{ } , \text{ })$

5. P is the point $(3, 5)$. Q is the point $(-1, 9)$. R is the midpoint of PQ .
On which one of the following lines does R lie?

(a) $y = x + 6$

(b) $y = x + 8$

(c) $y = x - 6$

(d) $y = x - 8$

6. A is the point $(1, 4)$. B is the point $(7, -6)$.
The point C divides AB in the ratio $3:5$.
What are the coordinates of C ?
Give your answers as exact decimals.

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7. What is the equation of the straight line that is parallel to the line $2y + 3x = 7$ and passes through the point $(2, -1)$?

(a) $2y + 3x = 1$

(b) $3y - 2x = 8$

(c) $2y + 3x = 4$

(d) $3y - 2x = -1$

8. What is the equation of the straight line that is perpendicular to the line $3y = x - 1$ and passes through the point $(1, 3)$?

(a) $y = -3x + 6$

(b) $3y = x + 8$

(c) $y = 3x$

(d) $3y = -x + 10$

9. Point A is $(5, -2)$ and point B is $(3, 6)$.

The equation of the perpendicular bisector of AB is

$$\boxed{}y = x + \boxed{}$$

10. A is the point $(1, 5)$, B is the point $(4, 7)$ and C is the point $(5, 2)$.

Triangle ABC is

(a) right-angled

(b) scalene with no right angle

(c) equilateral

(d) isosceles