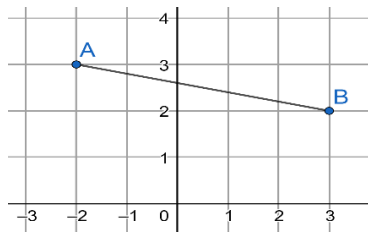1. What is the slope for each of the following questions?

a)   b) a line that passes through the points A(4, 8) and B(-3, 9)

2. Determine the value of "c" so that the line segment with endpoints A(5, -2) and B(2, 1) is perpendicular to the line segment with endpoints D(-3, c) and E(-5, 0).

3. Determine the value of "c" so that the line segment with endpoints A(2, -2) and B(-4, 5) is parallel to the line segment with endpoints D(c, -3) and E(5, -4).

4. Is the line passing through points A(3, 5) and B(5, -1) parallel/perpendicular/neither with the line passing through points C(-2, 6) and D(1, 7)?

Answer:

1. a) $\frac{-1}{5}$ b) $\frac{-1}{7}$

2.

Slope for AB: Slope for DE:

$$m = \frac{1-(-2)}{2-5} = \frac{3}{-3}$$ $$m = \frac{0-c}{-5-(-3)} = \frac{-c}{-2} = \frac{c}{2}$$

perpendicular $\therefore$ $\frac{3}{3} = \frac{c}{2}$, cross multiply you get

$3c = 6$ $\therefore$ $\boxed{c = 2}$

3. Using same strategy as 2, c = $\frac{29}{7}$

4. Perpendicular