Coordinate geometry: 10 practice questions

Year 9 · Free practice sheet from Tuterly · tuterly.com.au

Name: _____ Date: _____

Attempt all questions and show your working. Suggested time: 15 to 20 minutes.

Section A: Consolidating (Questions 1-4)

Question 1

Find the gradient of the line segment joining (1, 2) and (4, 8).

Question 2

Find the midpoint of the line segment joining (2, 6) and (8, 10).

Question 3

Find the distance between the points (0, 0) and (3, 4).

Question 4

State whether the line segment joining each pair of points has a positive, negative, zero or undefined gradient.

(a) (2, 5) and (6, 5)

(b) (3, 1) and (3, 7)

(c) (0, 4) and (2, 0)

(d) (-1, -3) and (2, 3)

Section B: Standard (Questions 5-10)

Question 5

Find the gradient of the line segment joining each pair of points.

(a) (-2, 3) and (4, -9)

(b) (1, -1) and (5, 1)

(c) (-3, -4) and (3, 5)

Question 6

Find the midpoint of the line segment joining each pair of points.

(a) (-4, 7) and (6, -1)

(b) (-3, -5) and (2, 4)

(c) (0, 9) and (7, 0)

Question 7

Find the distance between each pair of points. Give an exact answer, and also a decimal correct to 2 decimal places if the answer is not a whole number.

(a) (1, 2) and (7, 10)

(b) (-2, 5) and (3, -7)

(c) (2, -1) and (5, 3)

(d) (1, 1) and (4, 7)

Question 8

The midpoint of the line segment AB is M(4, 1). Point A is (1, -3). Find the coordinates of point B.

Question 9

The line segment joining (2, k) and (5, 11) has a gradient of 3. Find the value of k.

Question 10

(a) A straight road rises 15 m over a horizontal distance of 300 m. Find the gradient of the road as a fraction in simplest form.

(b) A wheelchair ramp rises 0.5 m over a horizontal distance of 6 m. Find its gradient as a fraction in simplest form.

(c) Which is steeper, the road or the ramp? Explain.

Coordinate geometry: answers

Year 9 · Free practice sheet from Tuterly · tuterly.com.au

Question 1

Answer: 2 ((8 - 2)/(4 - 1) = 6/3)

Question 2

Answer: (5, 8)

Question 3

Answer: 5 (√(3² + 4²))

Question 4

Answer: (a) zero (b) undefined (c) negative (d) positive

Question 5

Answer: (a) -2 (b) ½ (c) 3/2 (or 1.5)

Question 6

Answer: (a) (1, 3) (b) (-0.5, -0.5) (or (-½, -½)) (c) (3.5, 4.5)

Question 7

Answer: (a) 10 (b) 13 (√(25 + 144)) (c) 5 (d) √(45) (also accept 3√5) ≈ 6.71

Question 8

Answer: B(7, 5) ((1 + x)/(2) = 4 and (-3 + y)/(2) = 1)

Question 9

Answer: k = 2 ((11 - k)/(3) = 3)

Question 10

Answer: (a) 1/20 (b) 1/12 (c) the ramp, because 1/12 > 1/20 (it rises more for each metre across)