

Name: Key

Pd: _____ Date: _____

Accelerated Geometry B / Algebra II

Coordinate Geometry (GSE Unit 2)

Part 1: Multiple Choice Questions

Solve each problem and show your work on the space provided. Write the correct answer in the box.

1. What is the distance between the points $(x_1, y_1) = (3.5, -2.6)$ and $(x_2, y_2) = (-4.2, 7.5)$, approximately?
 (A) 13.6 (B) 13.7 (C) 12.7 (D) 12.6

$$\sqrt{(-4.2 - 3.5)^2 + (7.5 - -2.6)^2} = \sqrt{58.29 + 102.01}$$

C

2. What is the slope of the line joining the points $(x_1, y_1) = (-8, 4)$ and $(x_2, y_2) = (6, -2)$?

(A) $\frac{7}{3}$ (B) $-\frac{7}{3}$ (C) $\frac{3}{7}$ (D) $-\frac{3}{7}$ $\frac{-2-4}{6-(-8)} = \frac{-6}{14}$

D

3. What is the midpoint of the line segment joining the points $(x_1, y_1) = (-3, 5)$ and $(x_2, y_2) = (-8, 2)$?

(A) $(\frac{5}{2}, \frac{3}{2})$ (B) $(\frac{-11}{2}, \frac{7}{2})$ (C) $(\frac{11}{2}, \frac{-7}{2})$ (D) $(\frac{5}{2}, \frac{-3}{2})$

$$(\frac{-3+(-8)}{2}, \frac{5+2}{2}) = (\frac{-11}{2}, \frac{7}{2})$$

B

4. If M (3, 4) is the midpoint of the line segment joining the points (2, -3) and (4, x), what is the value of x?

(A) 11 (B) -11 (C) 6 (D) -6

$$4 = \frac{-3+x}{2}$$

$$8 = -3+x$$

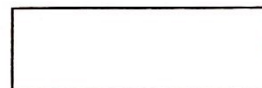
$$x = 11$$

A

5. If the perimeter of the rectangle given in the figure is 24 then what is the value of x?

(A) 25 (B) 13 (C) $\frac{13}{3}$ (D) $\frac{-13}{3}$ $2x-5$

4-x



B

$$2(4-x) + 2(2x-5) = 24$$

$$8 - 2x + 4x - 10 = 24$$

$$2x - 2 = 24$$

$$2x = 26$$

$$x = 13$$

Part 2: Free Response Questions

Solve each problem and show your work on the space provided. Circle your final answer.

6. Find the (a) perimeter and (b) area of the figure formed by the following sets of points:

E (2, 9), F (10, 2), G (2, 2)

(a) Perimeter:

$$EF^2 = 7^2 + 8^2$$

$$EF^2 = 49 + 64$$

$$EF = \sqrt{113}$$

$$7 + 8 + \sqrt{113} = 15 + \sqrt{113}$$

25.63 units

(Perimeter)

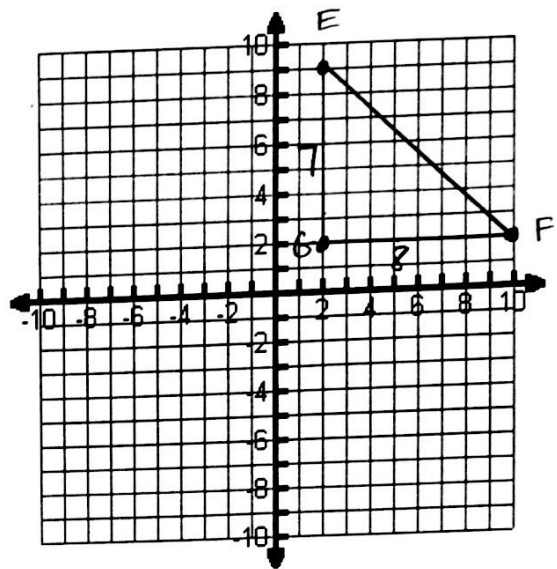
(b) Area:

$$A = \frac{1}{2}bh$$

$$= \frac{1}{2}(8)(7) = 28 \text{ units}^2$$

28 units²

(Area)



7. Find the (a) perimeter and (b) area of the figure formed by the following sets of points:

T (-5, 0), U (7, 3), V (9, -6), W (-4, -9)

(a) Perimeter:

$$TU = \sqrt{3^2 + 12^2} = 12.37$$

$$UV = \sqrt{2^2 + 9^2} = 9.22$$

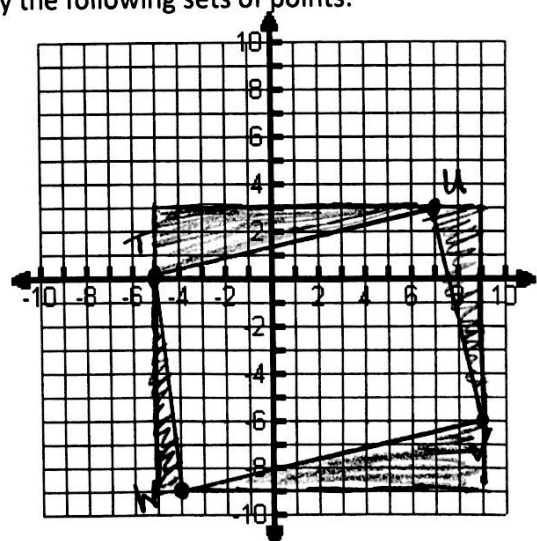
$$WV = \sqrt{3^2 + 13^2} = 13.34$$

$$TW = \sqrt{1^2 + 9^2} = 9.06$$

$$\frac{43.99}{}$$

43.99 units

(Perimeter)



(b) Area: Whole Rectangle - 4 triangles

$$= (12)(14) - \frac{1}{2}(1 \times 9) - \frac{1}{2}(3 \times 12) - \frac{1}{2}(2 \times 9) - \frac{1}{2}(3 \times 1)$$

$$= 168 - 4.5 - 18 - 9 - 1.5$$

$$= 117$$

117 units² (Area)

8. What is the type of quadrilateral formed by the following points: P (2, 1), Q (6, -2), R (10, 1), and S (6, 4)

Show all your work with entire proof.

$$\text{slope of } PQ = \frac{-3}{4}$$

$$\text{slope of } SR = \frac{-3}{4}$$

$$\text{slope of } PS = \frac{3}{4}$$

$$\text{slope of } QR = \frac{3}{4}$$

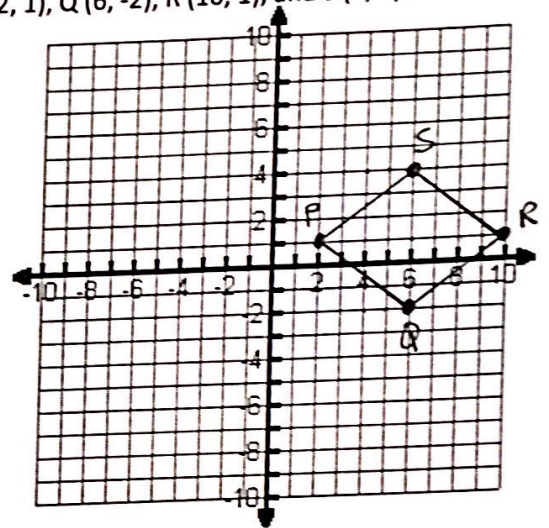
Both pairs of opp. sides are \parallel so this is a parallelogram.

$$\overline{PQ} = \sqrt{3^2 + 4^2} = 5$$

$$\overline{SR} = \sqrt{3^2 + 4^2} = 5$$

$$\overline{PS} = \sqrt{3^2 + 4^2} = 5$$

$$\overline{QR} = \sqrt{3^2 + 4^2} = 5$$



All four sides are congruent. The sides are not \perp . Therefore, this figure is a rhombus.

(Quadrilateral)

Rhombus