

4.5 DISTANCE FORMULA WORKSHEET

20 POINTS

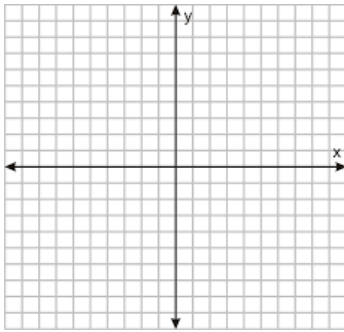
Name: _____

Date: _____

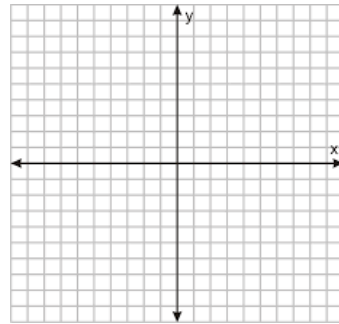
1) State the Distance formula: _____

2) Using the coordinate plane, plot the points and find the distance using only the distance formula.

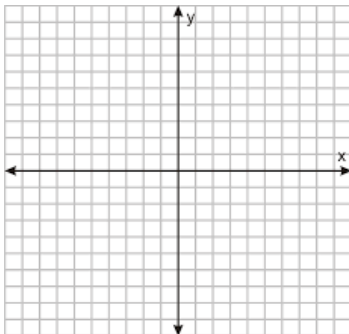
$(-3, 5)$ to $(4, 6)$



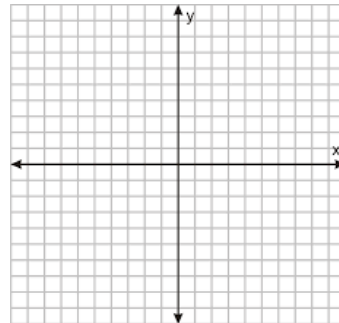
$(1, 7)$ to $(-2, -4)$



$(3, 9)$ to $(5, 1)$

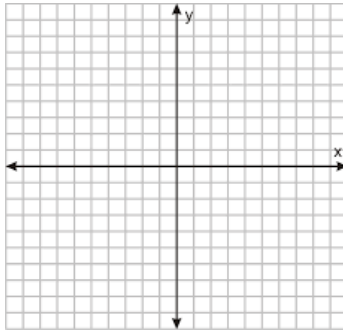


$(7, 4)$ to $(5, 1)$

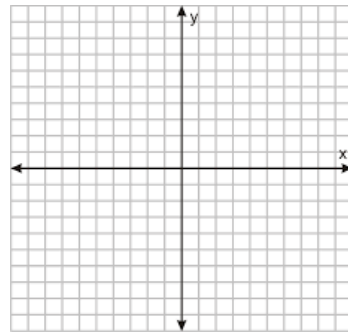


- 3) State the Pythagorean Theorem: _____
- 4) Solve the following using either the Pythagorean Theorem or the distance formula.

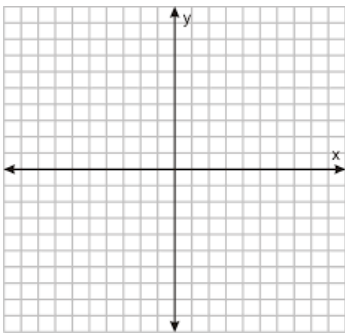
(3, 1) to (5, 3)



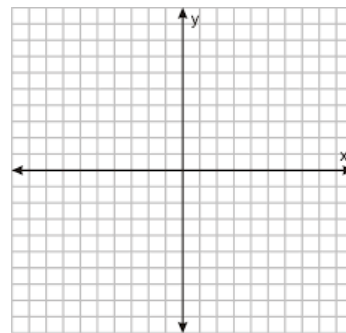
(8,2) to (3, 7)



(5, 5) to (7, 7)



(3, 9) to (4, 7)



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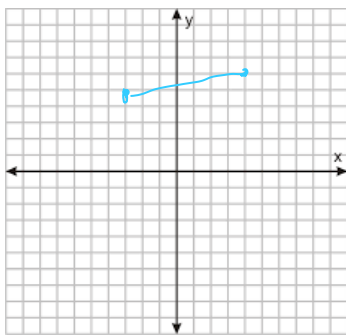
Name: **Answer Key**

Date: **18 points, 2 free points, 20 points total**

1) State the Distance formula: $= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ (1 point)

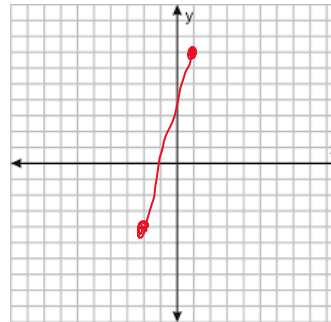
2) Using the coordinate plane, plot the points and find the distance using only the distance formula. (2 points per problem)

(-3, 5) to (4, 6)



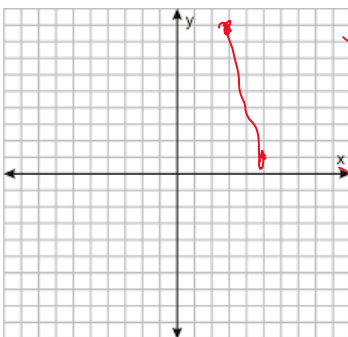
$$\begin{aligned} & \sqrt{(4 - (-3))^2 + (6 - 5)^2} \\ & \sqrt{(7)^2 + (1)^2} \\ & \sqrt{49 + 1} \\ & 7.071 \end{aligned}$$

(1, 7) to (-2, -4)



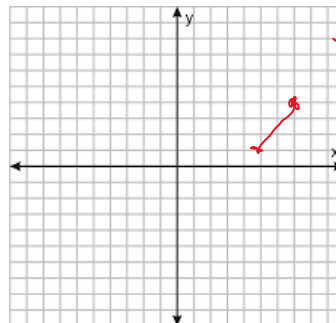
$$\begin{aligned} & \sqrt{(-2 - 1)^2 + (-4 - 7)^2} \\ & \sqrt{(-3)^2 + (-11)^2} \\ & \sqrt{9 + 121} \\ & 11.402 \end{aligned}$$

(3, 9) to (5, 1)



$$\begin{aligned} & \sqrt{(5 - 3)^2 + (1 - 9)^2} \\ & \sqrt{(2)^2 + (-8)^2} \\ & \sqrt{4 + 64} \\ & 8.246 \end{aligned}$$

(7, 4) to (5, 1)

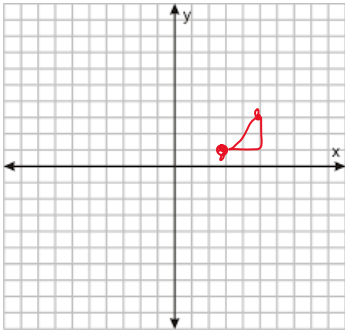


$$\begin{aligned} & \sqrt{(5 - 7)^2 + (1 - 4)^2} \\ & \sqrt{(-2)^2 + (-3)^2} \\ & \sqrt{4 + 9} \\ & 3.606 \end{aligned}$$

3) State the Pythagorean Theorem: $a^2+b^2=c^2$ (1 point)

4) Solve the following using either the Pythagorean Theorem or the distance formula. (2 points per problem)

(3, 1) to (5, 3)

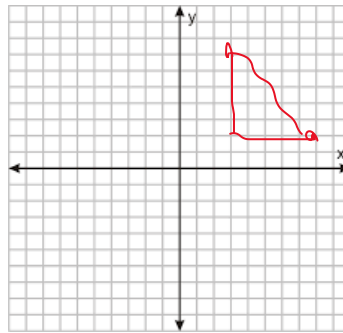


$$2^2+2^2=c^2$$

$$4+4=c^2$$

$$c=2.828$$

(8,2) to (3, 7)

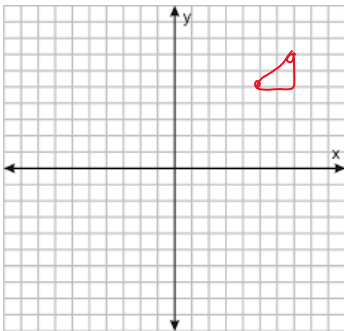


$$5^2+5^2=c^2$$

$$25+25=c^2$$

$$c=7.071$$

(5, 5) to (7, 7)

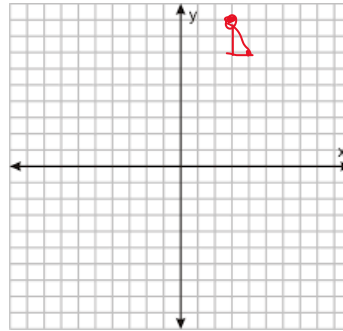


$$2^2+2^2=c^2$$

$$4+4=c^2$$

$$c=2.828$$

(3, 9) to (4, 7)



$$1^2+2^2=c^2$$

$$1+4=c^2$$

$$c=2.236$$