Geometry
Worksheet 1.2 (Congruence and Segment Addition)

Name: _____

Date: _____ Period: ___

Suppose $\overline{RS}$ is congruent to $\overline{MN}$. For each of the set of lengths, solve for x, and find the length of each segment.

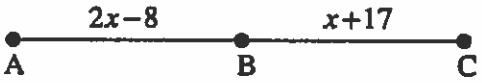
1. RS = 3x + 17, MN = 7x – 15

2. RS = x + 10, MN = 2x + 4

3. RS = 3x – 2, MN = x + 6

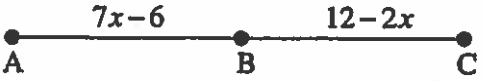
4. RS = 5x – 10, MN = 2x + 20

Suppose $\overline{AB}$ is congruent to $\overline{BC}$. Solve for x, and find the length of $\overline{AB}$, $\overline{BC}$ and $\overline{AC}$.

5. 

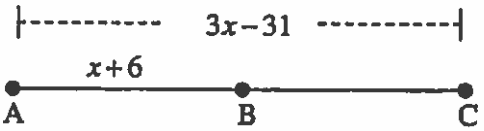
X = _____ AB = _____

BC = _____ AC = _____

6. 

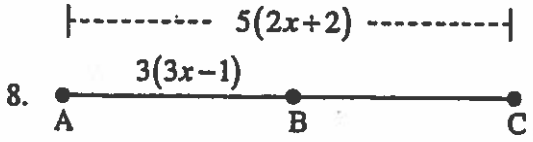
X = _____ AB = _____

BC = _____ AC = _____

7. 

X = _____ AB = _____

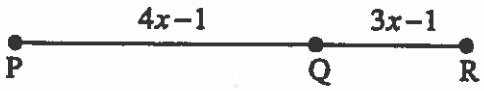
BC = _____ AC = _____

8. 

X = _____ AB = _____

BC = _____ AC = _____

Suppose that PR = 47. Solve for x and find the length of segments PQ and QR.

9. 

X = _____

PQ = _____ QR = _____

10.

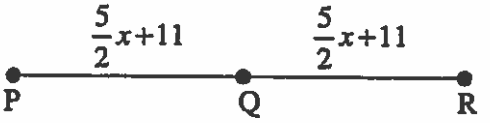
X = _____

PQ = _____ QR = _____

11.

X = _____

PQ = _____ QR = _____

12. 

X = _____

PQ = _____ QR = _____

Geometry Mathematics

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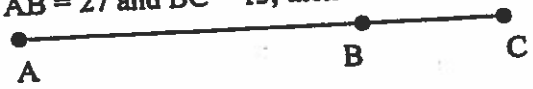
Unit 1 Segment Addition Worksheet

Segment Addition Postulate If B is between A and C, then $AB+BC=AC$.
If $AB+BC=AC$, then B is between A and C.

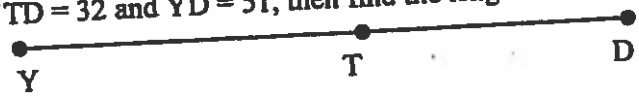
Write the **Segment Addition Postulate** for each problem. Also use **Segment Addition Postulate** to solve the following problems.

1. If AB = 27 and BC = 13, then find the length of AC.



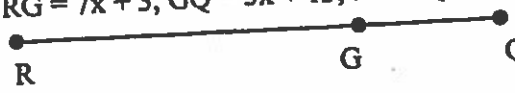
AC=_____

2. If TD = 32 and YD = 51, then find the length of YT.



YT=_____

3. If RG = 7x + 3, GQ = 3x + 13, and RQ = 56, then find the value for x, RQ, and GQ.



x=_____

RQ=_____

GQ=_____

4. If AB = x + 4, BC = 2x – 10, and AC =2x + 1, then find the value for x, AB, BC and AC.

x=_____

AB=_____

BC=_____

AC=_____

5. If AT = 6x – 2, TL = 4x – 12, and AL = 36, then find the value for x, AT, and TL.

x=_____

AT=_____

TL=_____

6. If RE = 4x + 7, ET = 2(3x – 4), and RT = 43, then find the value for x, RE, and ET.

x=_____

RE=_____

ET=_____

Name _____ Date: _____

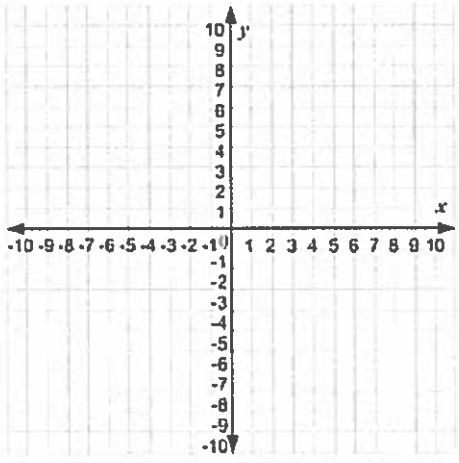
Distance Formula with Quadrilaterals Notes

What is the distance formula?

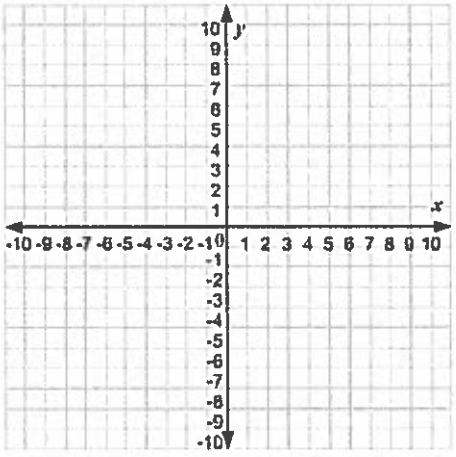
Examples of the distance formula when given two points:

Examples of the distance formula used to prove theorems pertaining to parallelograms.

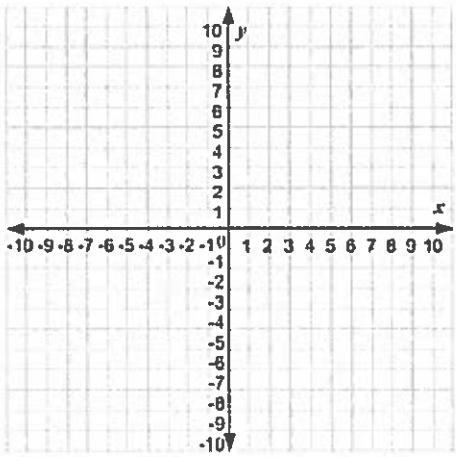
1. For the follow parallelogram prove that the opposite sides are congruent.
   - A $(-3, 1)$ B $(1, -5)$ C $(7, -2)$ D$(3, 4)$



2. For the following parallelogram prove that the diagonals are congruent.
   - A $(-5,6)$ B $(6,6)$ C $(8,-3)$ D$(-3,-3)$



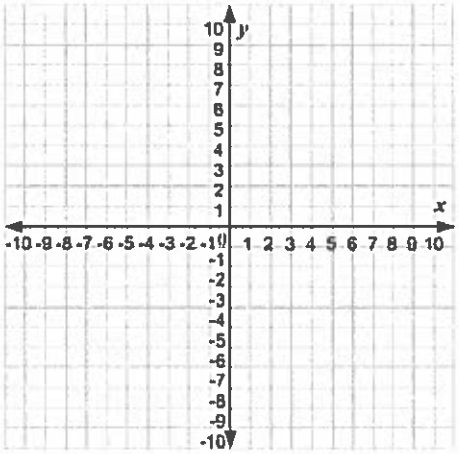
3. For the following parallelogram prove that the opposite sides are congruent and the diagonals are congruent.
   - A $(4,3)$ B $(8,3)$ C $(9,10)$ D$(5,10)$



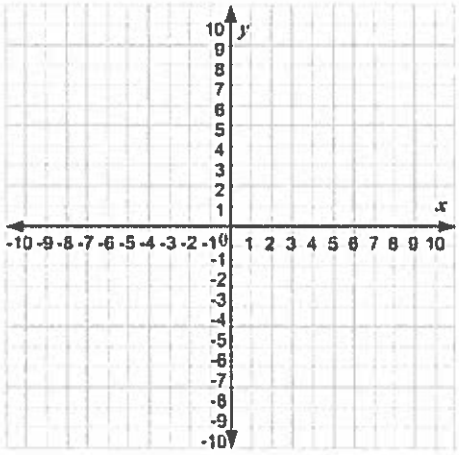
Name _____ Date: _____

Distance Formula with Quadrilaterals Worksheet

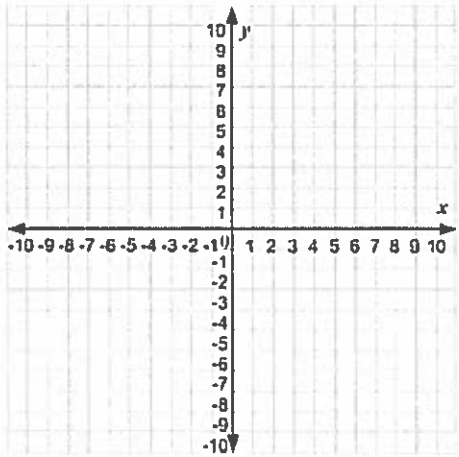
1. For the follow coordinates prove that the opposite sides are congruent.
   - A (2, 1) B (5, 4) C (8, 12) D(5, 9)



2. For the following coordinates prove that the diagonals are congruent.
   - A (−3,2) B (−2, −1) C (4, 1) D(3, 4)



3. For the following coordinates prove that the opposite sides are congruent and the diagonals are congruent.
   - A (1, 5) B (6, 3) C (3, −1) D(−2, 1)



Name_____

The Distance Formula

Date_____ Period____

Find the distance between each pair of points.

1) (7, 3), (−1, −4)

2) (3, −5), (−3, 0)

3) (6, −7), (3, −5)

4) (5, 1), (5, −6)

5) (5, −8), (−8, 6)

6) (4, 6), (−4, −3)

7) (−7, 0), (−2, −4)

8) (−4, −3), (1, 4)

9) (−2, 2), (−6, −8)

10) (6, 2), (0, −6)

11) (−3, −1), (−4, 0)

12) (−5, 4), (3, 1)

13) (−2, 3), (−1, 7)

14) (8, −5), (−1, −3)