Warm Up:

Solve the following Systems:

1. \[(x - 2y = 15)\] → \[-2x + 4y = -30\]
2. \[(6x + 7y = -9)\] → \[12x + 14y = -18\]

1. \[2x + 3y = 2\] → \[7x + 3y = 2\] \[\begin{align*}
4y &= -2 \quad \rightarrow \quad y = -\frac{1}{2} \\
7x &= -16 \quad \rightarrow \quad x = -\frac{8}{7}
\end{align*}\]

\[\begin{align*}
x &= -8 \\
y &= -4
\end{align*}\] \[\text{Solution: } (-7, -4)\]

2. \[-4x - 5y = 5\] \[-4x - 5\left(-\frac{1}{2}\right) = 5\] \[-4x + \frac{5}{2} = 5\] \[-4x = \frac{5}{2}\] \[x = -\frac{5}{8}\]

\[\begin{align*}
x &= -\frac{5}{8} \\
y &= 3
\end{align*}\] \[\text{Solution: } (-5, 3)\]
Homework Answers

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2. $PT, TP$

3. any two of the following: $AR, RA, AT, TA, RT, TR$

4. any two of the following: $MA, MS, AS, AM, SA, SM$

8. $\overline{AC}$ or $\overline{CA}$

9. $\overline{PQ}$ or $\overline{QP}$

10. $TR$ or $RT$, $RI$ or $IR$, and $TI$ or $IT$

18. R is the midpoint of $\overline{PQ}$. X is the midpoint of $\overline{WY}$. Y is the midpoint of $\overline{XZ}$. No midpoints are shown in $\triangle ABC$.

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1. (3, 4)

2. (-9, 1.5)

3. (5.5, 5.5)

4. (-6, 44)

5. Yes. The coordinates of the midpoint of a segment with endpoints $(a, b)$ and $(c, d)$ are found by taking the average of the $x$-coordinates, $\frac{a+c}{2}$, and the average of the $y$-coordinates, $\frac{b+d}{2}$. Thus the midpoint is $(\frac{a+c}{2}, \frac{b+d}{2})$.

6. (3, 2) and (6, 4). To get the first point of trisection, sum the coordinates of points A and B to get (9, 6), then multiply those coordinates by $\frac{1}{3}$ to get (3, 2). To get the second point of trisection, sum the coordinates of points A and B to get (9, 6), then multiply those coordinates by $\frac{2}{3}$ to get (6, 4). This works because the coordinates of the first point are (0, 0).
1.2 - Angles

Angle - formed by two rays that share a common endpoint
to name this angle:

\[ \angle TAP, \angle PAT \]

\[ \angle A \]
EXAMPLE A

Name all the angles in these drawings.

\[ \angle VUT \]

\[ \angle RUV, \angle 1, \angle VUR \]

\[ \angle T, \angle UTV, \angle UTV \]

\[ \angle XA2, \angle ZAX \]

\[ \angle YA2, \angle ZAY \]
Measure of an angle - $< 180^\circ$

Reflex of an angle - $180^\circ < \text{angle} < 360^\circ$
The geometry tool you use to measure an angle is a **protractor**.

**Step 1:** Place the center mark of the protractor on the vertex.

**Step 2:** Line up the 0-mark with one side of the angle.

**Step 3:** Read the measure on the protractor scale.

**Step 4:** Be sure you read the scale that has the 0-mark you are using! The angle in the diagram measures 34° and not 146°.

$\angle ZAP = 34^\circ$

To show the measure of an angle, use an $m$ before the angle symbol. For example, $m\angle ZAP = 34^\circ$ means the measure of $\angle ZAP$ is 34 degrees.
Use your protractor to measure these angles as accurately as you can. Which ones measure more than 90°?
Two angles are **congruent** if and only if they have the same measure.

A ray is the **angle bisector** if it contains the vertex and divides the angle into two congruent angles.
Look for angle bisectors and congruent angles in the figures below.

a. Name each angle bisector and the angle it bisects.

b. Name all the congruent angles in the figure. Use the congruence symbol and name the angles so there is no confusion about which angle you mean.