Section 1.3 Homework

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2. Which point is the vertex of $\angle BCD$? Which rays form the sides of $\angle BCD$?   point c , $\overrightarrow{CB}$ and $\overrightarrow{CB}$

3. **Music** Musicians use a metronome to keep time as they play. The metronome's needle swings back and forth in a fixed amount of time. Name all of the angles in the diagram. $\angle AOB, \angle BOC, \angle AOC$
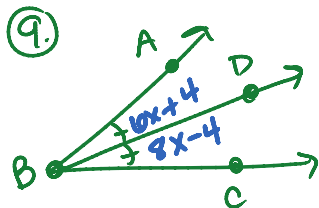
L is in the interior of $\angle JKM$. Find each of the following.
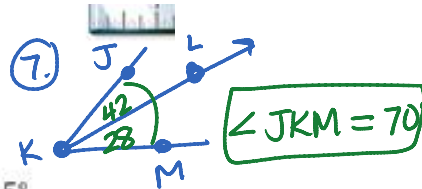
7. m$\angle JKM$ if m$\angle JKL = 42°$ and m$\angle LKM = 28°$ $\angle JKM = 70°$

8. m$\angle LKM$ if m$\angle JKL = 56.4°$ and m$\angle JKM = 82.5°$

Multi-Step $\overrightarrow{BD}$ bisects $\angle ABC$. Find each of the following.

9. m$\angle ABD$ if m$\angle ABD = (6x + 4)°$ and m$\angle DBC = (8x - 4)°$

10. m$\angle ABC$ if m$\angle ABD = (5y - 3)°$ and m$\angle DBC = (3y + 15)°$
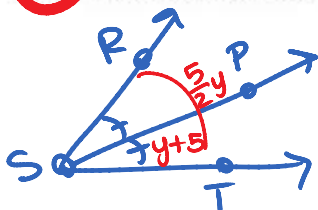
9.

$$6x+4 = 8x-4$$
$$8 = 2x$$
$$x = 4$$

$$\angle ABD = 6(4)+4$$
$$24+4$$
$$\boxed{28°}$$

Multi-Step $\overrightarrow{SP}$ bisects $\angle RST$. Find each of the following.

17. m$\angle RST$ if m$\angle RSP = (3x - 2)°$ and m$\angle PST = (9x - 26)°$

18. m$\angle RSP$ if m$\angle RST = \frac{5}{2}y°$ and m$\angle PST = (y + 5)°$

$$2(y+5) = \frac{5}{2}y$$
$$2y + 10 = 2.5y$$
$$10 = .5y$$
$$20 = y$$

$$\angle RSP = \angle PST$$
$$= y + 5$$
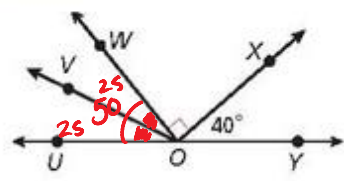$$\boxed{25°}$$

41. $m\angle UOW = 50°$, and $\overrightarrow{OV}$ bisects $\angle UOW$.
What is $m\angle VOY$?   *25 + 90 + 40*

Ⓐ 25°   Ⓒ 130°

Ⓑ 65°   Ⓓ 155°

42. What is $m\angle UOX$?   *50 + 90*

Ⓕ 50°   Ⓖ 115°   Ⓗ 140°   Ⓘ 165°

43. $\overrightarrow{BD}$ bisects $\angle ABC$, $m\angle ABC = (4x + 5)°$, and $m\angle ABD = (3x − 1)°$.
What is the value of x?

Ⓐ 2.2   Ⓑ 3   Ⓒ 3.5   Ⓓ 7

43)
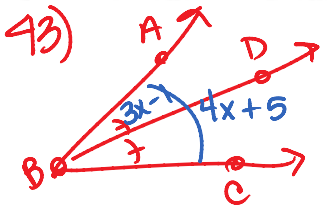
$$2(3x-1) = 4x + 5$$
$$6x - 2 = 4x + 5$$
$$2x = 7$$
$$x = 3.5$$

45. **Short Response** If an obtuse angle is bisected, are the resulting angles acute or obtuse? Explain.

An obtuse angle is greater than 90 and less than 180. if any angle within this range was bisected, the angles would be acute.
ex) 91/2 = 45.5 (acute)   ex) 179/2 = 89.5 (acute)

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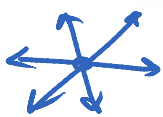## Draw and label each of the following.

1. a segment with endpoints X and Y

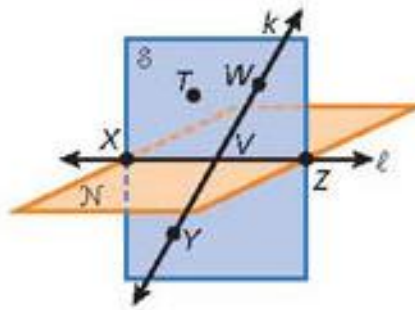2. a ray with endpoint M that passes through P

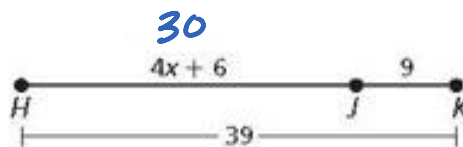3. three coplanar lines intersecting at a point

Use the figure to name each of the following.

5. three coplanar points

6. two lines $\overleftrightarrow{WY}$ and $\overleftrightarrow{XZ}$

7. a plane containing T, V, and X plane TVX

8. a line containing V and Z $\overleftrightarrow{VZ}$
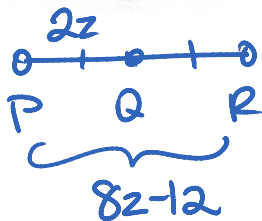
12. The diagram represents a straight highway with three towns, Henri, Joaquin, and Kenard. Find the distance from Henri H to Joaquin J.

$\overline{HJ} = 30$
$\overline{JK} = 9$
$\overline{HK} = 39$

30

4x + 6   9

H   J   K

39

$4x + 6 + 9 = 39$
$4x + 15 = 39$
$4x = 24$
$x = 6$

14. Q is the midpoint of $\overline{PR}$, $PQ = 2z$, and $PR = 8z - 12$. Find z, PQ, and PR.

2z

P   Q   R

8z-12

$2(2z) = 8z - 12$
$4z = 8z - 12$
$-4z = -12$
$z = 3$

$\overline{PQ} = 2(3)$
$= 6$

$\overline{PR} = 8(3) - 12$
$= 12$