Refer the following figure for problems 1 - 5.

1)   Name a point that is collinear with points D and P.   1) ___E___

2)   Name a point that is noncollinear with points A and B.   (other answers exist)   2) ___D___

3)   What is another name for plane R?   3) ___ADP___
     The answer can by any non-collinear 3-letter combo of: A, B, C, D, E, P.

4)   What is another name for $\overrightarrow{BP}$?   4) ___$\overrightarrow{BA}$___

5)   What is the intersection of $\overleftrightarrow{AB}$ and $\overleftrightarrow{DE}$?   5) ___P___

Refer the following figure for problems 6 - 9.
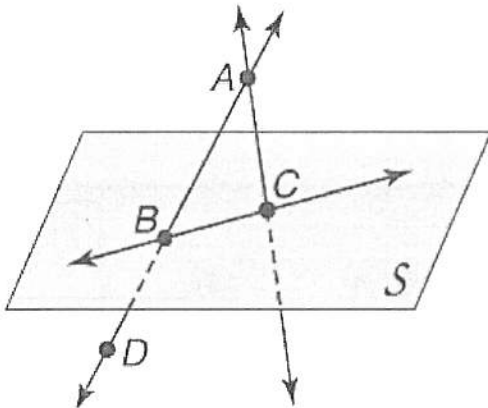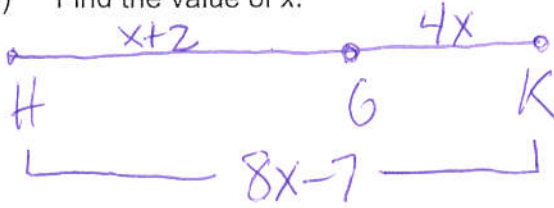

6)   What is the intersection of plane S and $\overleftrightarrow{BC}$?   6) ___$\overleftrightarrow{BC}$___

7)   What is the intersection of plane S and $\overleftrightarrow{AD}$?   7) ___B___

8)   Name three points that are coplanar.   8) ___A, B, C___
     The answer can be any 3 of these points: A, B, C, D.

9)   Are points A, B, and C coplanar?   9) ___yes___

Use the following information for numbers 10 and 11.
Point G is between points H and K, $HG = x + 2$, $GK = 4x$, and $HK = 8x - 7$

10) Find the value of x.

$x + 2$ ———— $4x$
H G K
———— $8x - 7$ ————

10) _____ $x = 3$ _____

$x + 2 + 4x = 8x - 7$
$5x + 2 = 8x - 7$
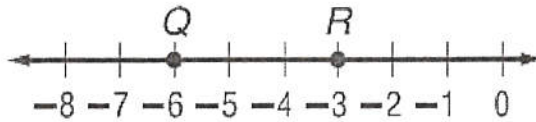$-5x + 7 \quad -5x + 7$
$9 = 3x$
$x = 3$

11) Find the length of HK.

$8(3) - 7 = 17$

11) _____ 17 _____

Use the number line for problems 12 & 13.

$\frac{-6 + 3}{2} = \frac{-9}{2}$

12) Find the midpoint of $\overline{QR}$

12) _____ $-9/2$ _____

13) Find the measure of QR.

13) _____ 3 _____

Use the points $A(2,2)$ and $B(7,4)$ for problems 14 & 15.
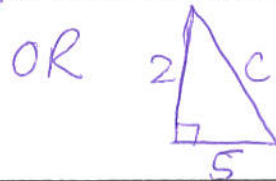
14) Find the coordinates of the midpoint of AB.

$\frac{2+7}{2} = \frac{9}{2}$ (or 4.5) $\frac{2+4}{2} = 3$

14) _____ $(4.5, 3)$ _____

15) Find the distance between A and B. *Answers can be left in radical form or a decimal rounded to the nearest tenth place.*

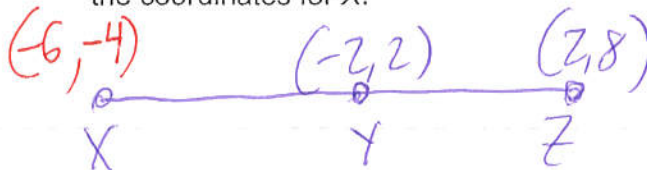$d = \sqrt{(2-7)^2 + (2-4)^2}$ OR

$= \sqrt{25 + 4} = \sqrt{29}$

$2^2 + 5^2 = c^2$
$29 = c^2$
$c = \sqrt{29}$

15) _____ $\sqrt{29}$ _____

16) $Y(-2,2)$ is the midpoint of $\overline{XZ}$. If Z has coordinates $(2, 8)$, find the coordinates for X.

$(-6, -4)$ $(-2, 2)$ $(2, 8)$
X Y Z

16) _____ $(-6, -4)$ _____

Determine whether each statement is true or false.

17) Any three points are coplanar. 17) _true_

18) An acute angle has no complement. 18) _false_

19) All adjacent angles are congruent. 19) _false_

20) All vertical angles are congruent. 20) _true_

21) If D is between M and T, then $MD = DT + MT$. 21) _false_
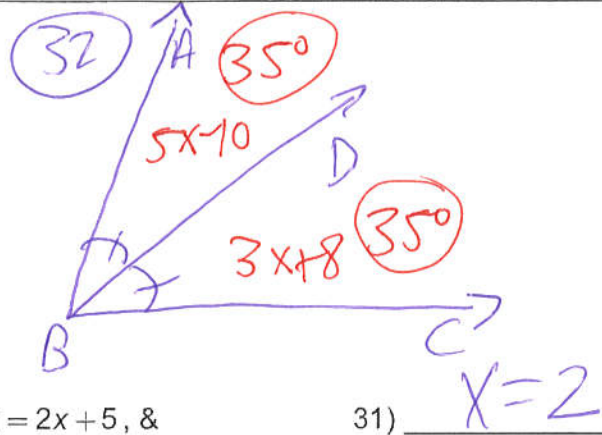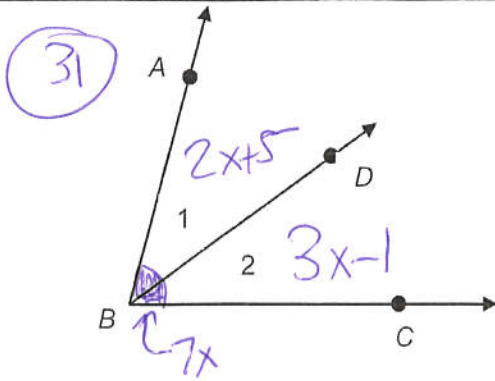
Refer to the following figure for problems 22 – 30.
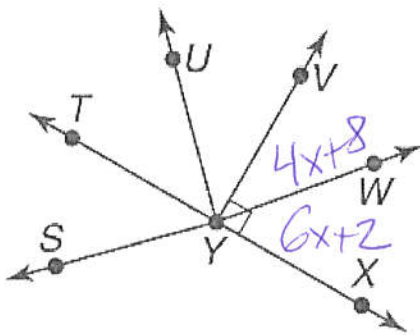
22) Name a pair of vertical angles. 22) $\angle TYS, \angle WYX$

23) Name the angle that is complementary to $\angle VYW$. 23) $\angle WYX$

24) Name a right angle. 24) $\angle VYX$

25) Name a linear pair. 25) $\angle TYS, \angle XYS$

26) Is $\overline{VY} \perp \overline{TX}$? 26) _yes_

27) Name the sides of $\angle SYT$. 27) $\overrightarrow{YT}, \overrightarrow{YS}$

28) Name the vertex of $\angle TYW$. 28) _Y_

29) Name a pair of opposite rays. 29) $\overrightarrow{YT}, \overrightarrow{YX}$

30) If $m\angle VYW = 4x + 8$, $m\angle WYX = 6x + 2$, find the value of x. 30) $x = 8$

$4x + 8 + 6x + 2 = 90$

$10x + 10 = 90$ $x = 8$

$10x = 80$

Refer to the following figure for problems 31 – 34.

31)

A

$2x+5$

1

$3x-1$

2

B $-7x$ C

D

32) $\hat{A}$ $35°$

$5x-10$

D

$3x+8$ $35°$

B

C

$x=2$

31) Find the value of x if $m\angle ABC = 7x$, $m\angle 1 = 2x+5$, & 31) ___$x=2$___
$m\angle 2 = 3x-1$.

$$2x+5+3x-1=7x$$
$$5x+4=7x$$
$$-5x \quad -5x$$
$$4=2x \qquad x=2$$

32) If $\overrightarrow{BD}$ bisects $\angle ABC$, $m\angle ABD = 5x-10$ & $m\angle DBC = 3x+8$, 32) ___$70°$___
find $m\angle ABC$.

$$5x-10=3x+8$$
$$-3x+10 \quad -3x+10 \qquad x=9$$
$$2x=18$$

33) If $\angle ABC$ is a right angle, then what type of angle is $\angle ABD$? 33) ___acute___

34) If $\angle ABC$ is a right angle and $\overrightarrow{BD}$ bisects $\angle ABC$, what is 34) ___$45°$___
$m\angle ABD$?

35) Find the measures of two supplementary angles if the measure 35) ___30 150___
of one angle is five times its supplement.

$$x+5x=180$$
$$6x=180$$
$$x=30, \quad 2^{nd} \text{ angle} = 150$$