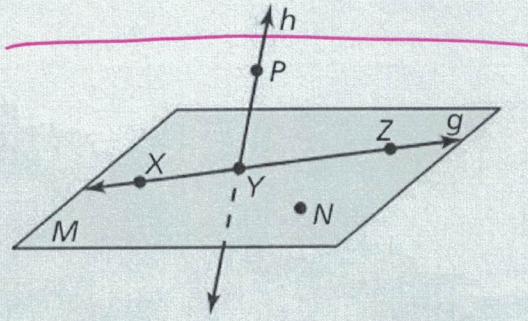


Use the diagram.

1. Give another name for plane M . **PLANE XYN**
2. Name a line in the plane. **LINE g , \overleftrightarrow{XZ}**
3. Name a line intersecting the plane. **LINE h , \overleftrightarrow{PY}**
4. Name two rays. **\overrightarrow{YX} , \overrightarrow{YZ} (MULTIPLE ANSWERS)**
5. Name a pair of opposite rays. **\overrightarrow{YX} + \overrightarrow{YZ}**
6. Name a point not in plane M . **P**



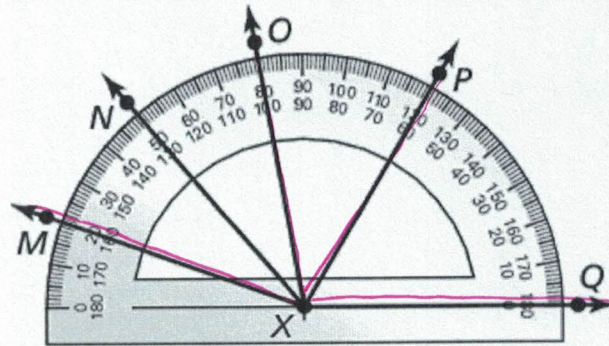
USE ANY 3 LETTERS FROM X, Y, Z CAN EXCEPT XYZ

h IS A LINE, NOT A POINT

SAME ENDPOINT, OPPOSITE DIRECTIONS

For #7 and #8, find each angle measure. Then classify each as acute, right, obtuse, or straight.

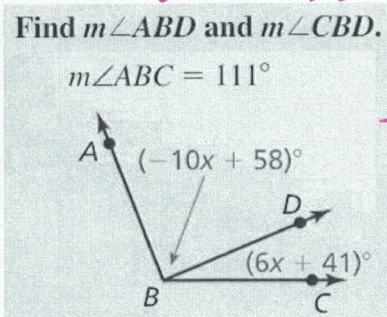
- 7.) $m\angle MXQ$ **160° OBTUSE (NOT 20°)**



- 8.) $m\angle OXP$ **40° ACUTE**

$100 - 60 = 40$
OR
 $120 - 80 = 40$

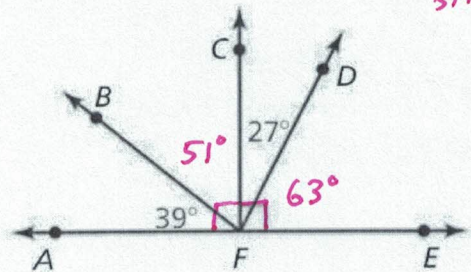
- 9.) Find $m\angle ABD$ and $m\angle CBD$.



$-10x + 58 + 6x + 41 = 111$
 $-4x + 99 = 111$
 $-4x = 12$
 $x = -3$

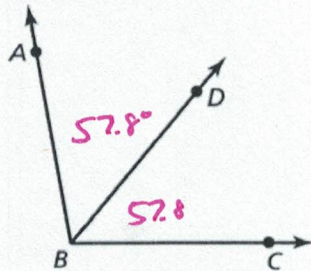
$-10(-3) + 58 = 88$
 $6(-3) + 41 = 23$
 $88 + 23 = 111$

- 10.) In the diagram, find $m\angle DFE$, $m\angle BFC$, and $m\angle BFE$.



63° 51° 141°
 $51 + 90$

- 11.) \overline{BD} bisects $\angle ABC$ and $m\angle ABD = 57.8^\circ$. Find $m\angle DBC$ and $m\angle ABC$.



57.8° 115.6°

$57.8 \times 2 = 115.6$

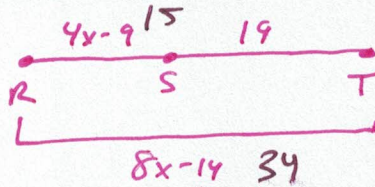
$m\angle DBC = \underline{57.8^\circ}$

$m\angle ABC = \underline{115.6^\circ}$

12.) Point S is between points R and T on \overline{RT} . Use the information to write an equation. Then solve the equation and find RS , ST , and RT .

$$RS = 4x - 9 \quad RT = 8x - 14 \quad ST = 19$$

1. DRAW IT (DIAGRAM)
2. LABEL
3. EQUATION AND SOLVE
4. STOP, READ, DO



$$4x - 9 + 19 = 8x - 14$$

$$4x + 10 = 8x - 14$$

$$-8x \quad -8x$$

$$-4x + 10 = -14$$

$$-10 \quad -10$$

$$\frac{-4x}{-4} = \frac{-24}{-4}$$

$$x = 6$$

$$4(6) - 9 = 15$$

$$8(6) - 14 = 34$$

Factor and solve the following equations.

13.) $2x^2 + 5x - 42 = 0$ $a \cdot c = -84$

$$2x^2 - 7x + 12x - 42 = 0$$

$$x(2x-7) + 6(2x-7) = 0$$

$$(2x-7)(x+6) = 0$$

$$2x-7=0$$

$$x = \frac{7}{2}$$

$$x+6=0$$

$$x = -6$$

- 1, 84
- 2, 42
- 3, 28
- 4, 21
- 6, 14
- 7, 12**

14.) $20a = a^2 + 64$

$$a^2 - 20a + 64 = 0$$

$$(a-4)(a-16) = 0$$

$$a = 4, 16$$

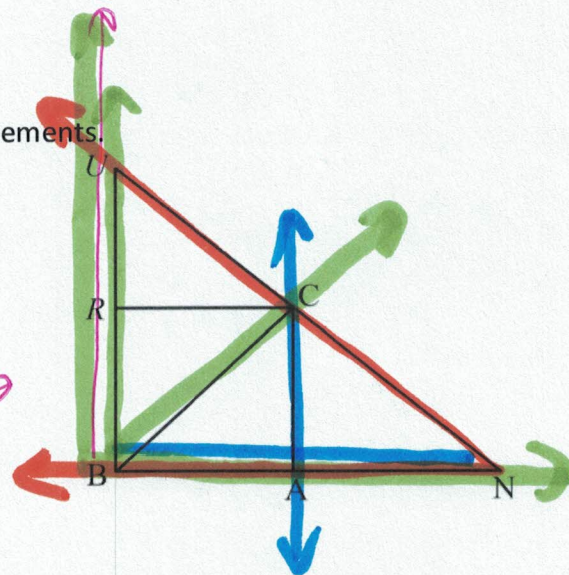
- $a \cdot c = 64$
- 1, 64
- 2, 32
- 4, 16**
- 8, 8

15.) Determine the union (\cup) or intersection (\cap) of the following statements.

a.) $\overrightarrow{NB} \cup \overrightarrow{NU} = \angle UNB$ or $\angle BNU$
UNION

b.) $\overrightarrow{BN} \cap \overrightarrow{CA} = A$
INTERSECT

c.) $\angle UBC \cap \angle NBU = \overrightarrow{BU}$ or \overrightarrow{BR}
INTERSECT SAME RAY



Solve the following complementary/supplementary word problems.

16.) The complement of an angle is 35 more than the measure of the angle. Find the supplement of the original angle.

$$\frac{x}{\text{ANGLE}} + \frac{x+35}{\text{COMP}} = 90$$

$$2x + 35 = 90$$

$$2x = 55$$

$$x = 27.5$$

$$\text{ANGLE} = 27.5^\circ$$

$$90 - 27.5 = 62.5 \text{ COMP}$$

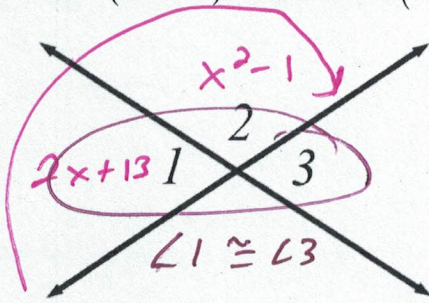
$$180 - 27.5 = 152.5 \text{ SUPP}$$

$$\text{SUPPLEMENT} = 152.5^\circ$$

37°

17.) If $m\angle 1 = (2x+13)^\circ$ and $m\angle 2 = (x^2-1)^\circ$, find $m\angle 3$.

18.) Find $m\angle GAE$.



$\angle 1 + \angle 2 = 180^\circ$

$\angle 1 = 37^\circ$
 $\angle 2 = 143^\circ$
 $\angle 3 = 37^\circ$

$2x + 13 + x^2 - 1 = 180$

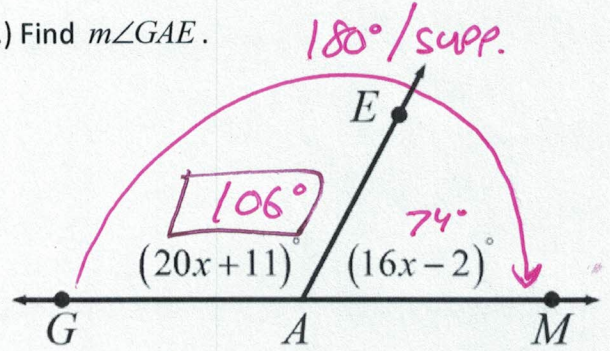
$x^2 + 2x + 12 = 180$

$x^2 + 2x - 168 = 0$

$(x-12)(x+14) = 0$

-168
1,168
2,84
3,56
4,42
6,28
7,24
8,21
 $-12, 14$

$x = 12$ (crossed out)



$20x + 11 + 16x - 2 = 180$

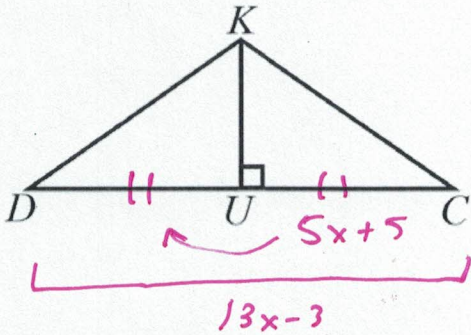
$36x + 9 = 180$

$36x = 171$

$x = 4.75$

$m\angle CAE = 20(4.75) + 11 = 106^\circ$

19.) U is the midpoint of segment DC, where $UC = 5x + 5$ and $DC = 13x - 3$. Find the length of segment DU.



$2(5x+5) = 13x-3$

$10x + 10 = 13x - 3$

$10 = 3x - 3$

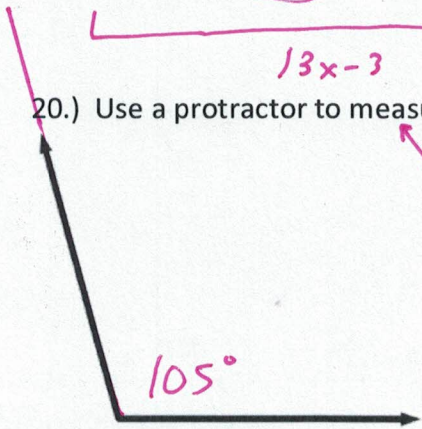
$3x = 13$
 $x = \frac{13}{3}$ or $4.\bar{3}$

$DU = UC = 5x + 5$

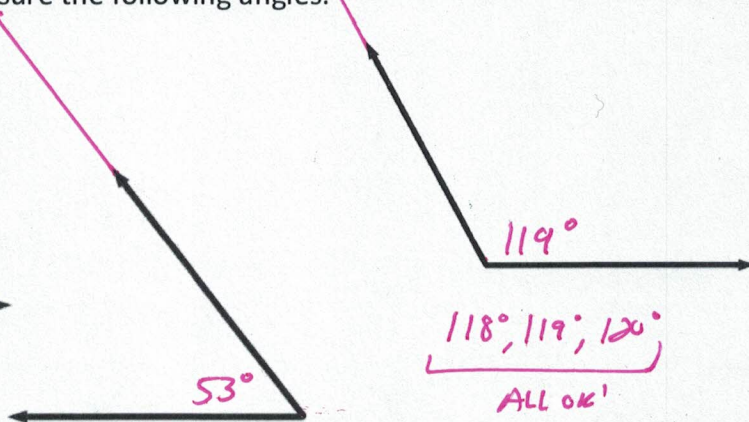
$DU = 5(4.\bar{3}) + 5$

$DU = 26.\bar{6}$

20.) Use a protractor to measure the following angles.



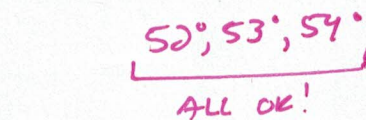
104°, 105°, 106°
All ok!



118°, 119°, 120°
All ok!



61°, 62°, 63°
All ok!



52°, 53°, 54°
All ok!

Topic	Problem Numbers
Naming basic geometric parts (Point, line, plane, segment, ray)	1-6,15
Union and Intersection	15
Betweenness, segment addition, midpoint, and segment bisectors	12,19
Naming, classifying, and measuring angles	7,8,20
Angle addition and angle bisectors	9,10,11,18
Linear pairs, and complementary, supplementary, and vertical angles.	10,16,17,18
Prior Learning	Problem Numbers
n/a	
Algebra Integration	Problem Numbers
Solving 1 variable equations	9,12,16,18,19
Decimals, fractions, and percents	n/a
Factoring polynomials	13,14,17

Vocab Review

- | | |
|---|--|
| <ul style="list-style-type: none"> • Point • Segment • Ray • Line • Planes • Collinear • Coplanar • Opposite rays • Congruent segments • Congruent angles • Midpoint • Segment bisector | <ul style="list-style-type: none"> • Angle • Vertex • Acute Angle • Obtuse Angle • Right Angle • Straight Angle • Congruent Angles • Angle Bisector • Complementary Angles • Supplementary Angles • Adjacent Angles • Linear Pair • Vertical Angles |
|---|--|