Name __ANSWERS__   Period____ Date_____

Geometry⬤: Practice with Unit 1

This practice should be used as practice for the Unit 1 assessment. This **should not** be the only tool that you use to prepare yourself for the assessment. You must go through your notes, re-do homework problems, class work problems and formative assessment problems.

1.2

Use the figure below for Exercises 1–12. Note that $\overrightarrow{RN}$ pierces the plane at N. It is _not_ coplanar with V.

1. Name two segments shown in the figure. $\overline{AN}$ $\overline{MC}$

2. What is the intersection of $\overleftrightarrow{CM}$ and $\overleftrightarrow{RN}$?   point N

3. Name three collinear points.   points C, N, M

4. What are two other ways to name plane V? plane ANC, plane MXN

5. Are points $R, N, M,$ and X coplanar?   No

6. Name two rays shown in the figure. $\overrightarrow{NC}$, $\overrightarrow{XA}$

7. Name the pair of opposite rays with endpoint N. $\overrightarrow{NX}$ and $\overrightarrow{NA}$

8. Name $\overleftrightarrow{NX}$ two other ways. $\overleftrightarrow{AX}$, $\overleftrightarrow{AN}$

9. Name a straight angle. $\angle ANX$

10. Name the intersection of *plane ACX* and *line CM* $\overleftrightarrow{CM}$

11. When two distinct planes intersect, their intersection is a ___line___.

12. Name intersection of *plane ACX* and line *RN*   point N

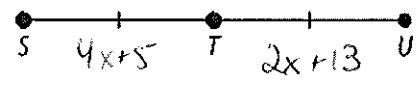13. Circle the 4 expressions that use correct notation. (one from each column)
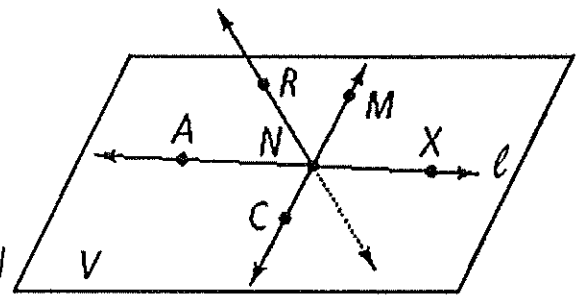
AB ≅ CD $\overline{XY}$ = 12 cm   (m∠FEG = 32°)   m∠ABC ≅ m∠DEF

(AB ≅ CD)   (XY = 12 cm)   ∠FEG = 32°   (m∠ABC = m∠DEF)

14. $\overline{AY}$ is the same as $\overline{YA}$. True or false? Explain   True A and Y are the endpts of same segment

1.3

1. Given: $ST = 4x + 5$ and $TU = 2x + 13$.

   a. What is the value of ST? $4(4)+5 = (21)$

   b. What is the value of TU? $2(4)+13 = (21)$

   c. What is the value of SU? (42)

$4x+5 = 2x+13$
$-4x -5 \quad -2x -5$
$2x = 8$
$x = 4$

2. Given that B is between points A and C, AB = 4x, BC = 5x – 8, and AC = 19.

$4x + 5x - 8 = 19$
$\quad +8 \quad +8$
$9x = 27$
$x = 3$

   a. $x = \underline{3}$

   b. $AB = \underline{12}$ $BC = \underline{7}$

$5(3) - 8$

3. Draw a diagram in which $\overrightarrow{QS}$ bisects $\overline{XY}$ at point M.
Given XM = 2x + 5 and XY = 5x, write an equation and solve for x.

Diagram:
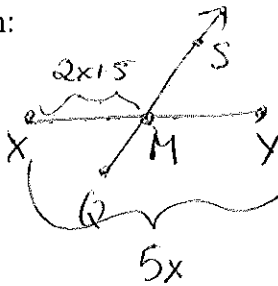
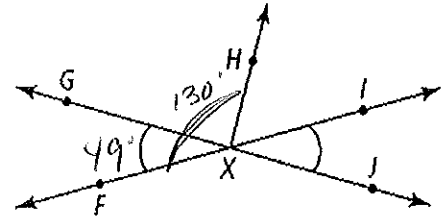Equation: $2x+5 + 2x+5 = 5x$ x = ___10___

$$4x + 10 = 5x$$
$$10 = x$$

1.4

1. ∠JKL and ∠CDE are congruent. If m∠JKL = 137, what is m∠CDE? $137°$

Use the figure at the right for Exercises 2-5. m∠FXH = 130 and m∠FXG = 49.

2. ∠FXG ≅ ___< I X J___

3. m∠GXH = ___81°___   (130 - 49)

4. Name a straight angle in the figure. ___< F X I___

5. ∠FXG and ∠ ___GXI___ form a linear pair.

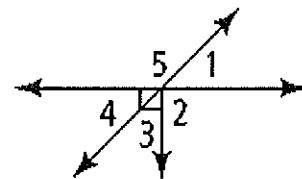6. Complete the angle addition postulate for the diagram at right.
m∠RZS + m∠ _S Z T_ = m∠RZT
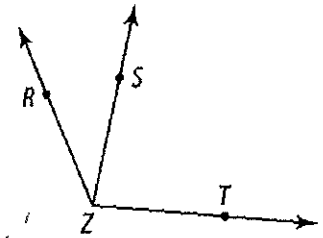
7. **Reasoning** ∠JNR and ∠RNX are congruent. If the sum of the measures of the two angles is 180, what type of angle are they?   90° each, so both right ∡'s

1.5

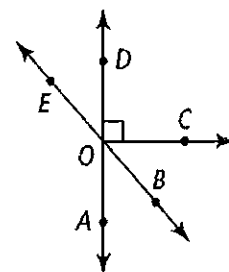**Use the diagram at right. Is each statement true? Explain.**

1. ∠2 and ∠5 are adjacent angles. T

2. ∠1 and ∠4 are vertical angles. T

3. ∠4 and ∠5 are complementary. F

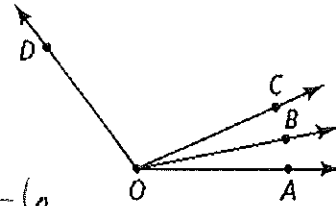**Name an angle or angles in the diagram described by each of the following.**

4. complementary to ∠BOC   ∠BOA

5. supplementary to ∠DOB   <DOE

6. adjacent and supplementary to ∠AOC   < COD

Use the diagram at right for Exercises 7 and 8. Solve for x.
Find the angle measures.

7. $m\angle COD = 8x + 13$; $m\angle BOC = 3x - 10$; $m\angle BOD = 12x - 6$

(17)   (102)
$3(9)-10$ $12(9)-6$

$8(9)+13$
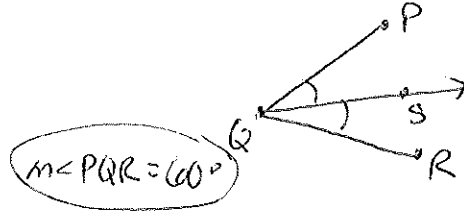$72+13$
(85)

$8x+13+3x-10=12x-6$
$11x+3=12x-6$
$(9=x)$

8. $\angle JKL$ and $\angle MNP$ are complementary, $m\angle JKL = 2x - 3$ and $m\angle MNP = 5x + 2$.
What are $m\angle JKL$ and $m\angle MNP$?

$2(13)-3$ $5(13)+2 = (67)$
(23)

$2x-3+5x+2=90$
$7x-1=90$
$7x=91$
$(x=13)$

For Exercises 9-11, $\overrightarrow{QS}$ bisects $\angle PQR$. Solve for x and find $m\angle PQR$.

9. $m\angle PQS = 3x$; $m\angle SQR = 5x - 20$
30
$3x=5x-20$
$20=2x$
$x=10$

$m\angle PQR = 60°$

10. $m\angle PQR = 3x - 12$; $m\angle PQS = 30$

$2(30)=3x-12$
$60=3x-12$ $x=24$ $m\angle PQR=60°$
$72=3x$

11. $m\angle PQS = 2x + 10$; $m\angle SQR = 5x - 17$
$2(9)+10$
28 $2x+10=5x-17$ $m\angle PQR=2(28)=(56°)$
$27=3x$ $x=9$

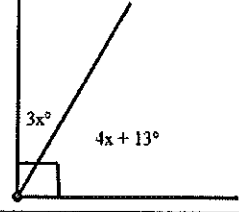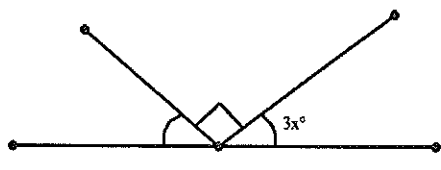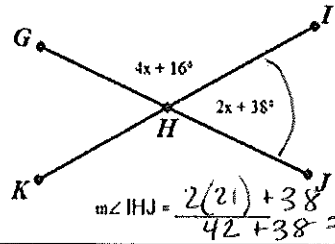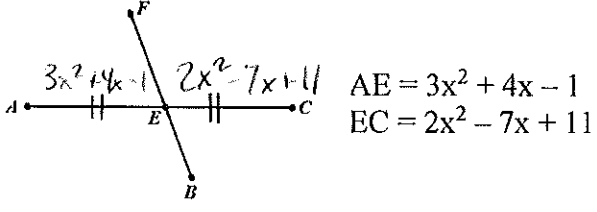12. Supplementary angles and a linear pair are the same thing. True or False? Explain.
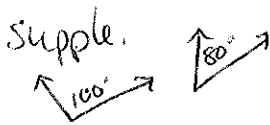
Supple.   [diagram $100°$ / $80°$]   Linear pair [diagram $100°$ $80°$]   False, Linear pairs have to be adjacent & supplem. don't

Mixed Review/Practice. *Write an equation and solve for x in each diagram.*

Diagram	Equation	$x =$
1. $6x$ 120 A B C $AC = 174$ $x =$____	$6x+120=174$ -120 $6x=54$ $x=9$	$x = 9$
2. C $12x+25°$ $3x-5°$ A B D	$12x+25+3x-5=180$ $15x+20=180$ $15x=160$ $x=10.\overline{6}$	$x = 10.\overline{6}$

	Diagram	Equation	$x =$
3.	E is the midpoint of $\overline{DF}$ $4x + 7$ $\quad$ $6x - 9$ D $\qquad$ E $\qquad$ F	$4x+7=6x-9$ $16=2x$	$x = \underline{\ 8\ }$
4.	$3x°$ $4x + 13°$	$3x+4x+13=90$ $7x+13=90$ $7x=77$	$x = \underline{\ 11\ }$
5.	$3x°$	$3x+90+3x=180$ $6x=90$ $x=15$	$x = \underline{\ 15\ }$
6.	G $4x + 16°$ $2x + 38°$ H I K $\qquad$ J $m\angle IHJ = \dfrac{2(21)+38}{42+38} = 80$	$4x+16+2x+38=180$ $6x+54=180$ $6x=126$	$x = \underline{\ 21\ }$ $m\angle IHJ = $ $\underline{\ 80°\ }$
7	F $3x^2+4x-1$ $\quad$ $2x^2-7x+11$ A $\quad$ E $\quad$ C B $AE = 3x^2 + 4x - 1$ $EC = 2x^2 - 7x + 11$	$3x^2+4x-1=2x^2-7x+11$ $-2x^2 \ +7x \ -11 \quad -2x^2 \quad -11$ $x^2+11x-12=0$ $(x-1)(x+12)=0 \quad x=-12,1$	$x = \underline{-12, 1}$

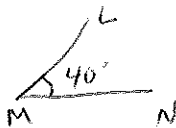Draw a sketch and label as needed. Do the best that you can with the drawings.

8. Three collinear points A, B, and C.

9. $\overleftrightarrow{MN}$ intersecting $\overleftrightarrow{AB}$ at point R.

10. Coplanar points W, X, Y, and Z.

11. Collinear rays, $\overrightarrow{JK}$ and $\overrightarrow{JC}$

12. Acute angle LMN

13. Obtuse angle XYZ

14. $\overline{GO}$ with midpoint E

15. Angles that are supplementary, but <u>not</u> a linear pair.

16. Straight angle BAL
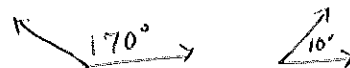
17. $\overline{LM}$ bisects $\overline{NO}$, but $\overline{NO}$ <u>does not</u> bisect $\overline{LM}$