Name Key

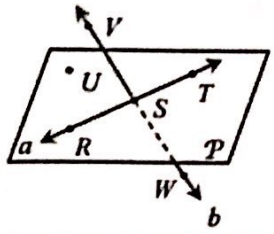
Date _____ Period _____

MP1 Quarterly Review

Regular Geometry

Topic 1: Geometry Basics

1. Use the diagram to the right to answer the questions below.

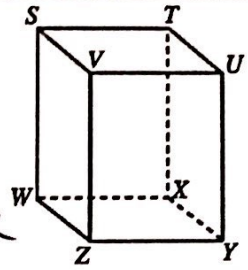


a. Name a point collinear to points S and T. R

b. Give another name for line *b*. $\overleftrightarrow{VS}$, $\overleftrightarrow{SW}$, $\overleftrightarrow{VW}$

c. Name a point non-coplanar to points *R*, *T*, and *U*. W, V

2. Use the diagram to the right to answer the questions below.



a. Name the intersection of planes *WXYZ* and *TUXY*. bottom right $\overleftrightarrow{XY}$

b. Name a point coplanar to points *T*, *W*, and *X*. S

c. Are points *S*, *Z*, and *U* coplanar? Explain no, not on same plane

Distance Formula:

$$d = \sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$$

Midpoint Formula:

$$MP_{(x_m,y_m)} = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$$

Use the midpoint and distance formulas for questions 3-4.

3. Find the length of $\overline{AB}$, given A(-1, 7) and B(11, -1).

x_1, y_1 x_2, y_2

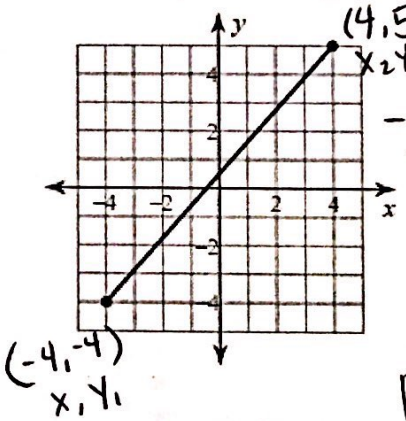
$\sqrt{(11-(-1))^2+(-1-7)^2}$

$\sqrt{12^2+(-8)^2}$

$\sqrt{144+64}$

$\sqrt{208} \approx 14.4$

4. Find the midpoint of the given segment.



$\frac{-4+4}{2}, \frac{-4+5}{2}$

$\frac{0}{2}, \frac{1}{2}$

$(0, \frac{1}{2})$

5. M(2,-7) is the midpoint of $\overline{RS}$. The coordinates of S are (8,-5). What are the coordinates of R?

R (?, ?) (-4, -9)

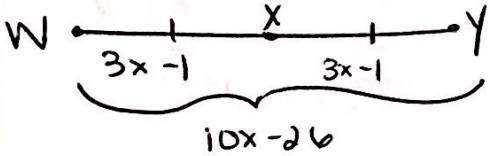
-6 -2

M 2, -7

-4 -2

S 8, -5

6. If X is the midpoint of $\overline{WY}$, $WX = 3x - 1$ and $WY = 10x - 26$, find XY.



$3(6)-1$

$18-1$

17

$3x-1+3x-1=10x-26$

$6x-2=10x-26$

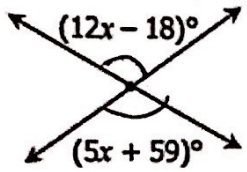
$-6x \quad -6x$

$-2=4x-26$

$+26 \quad +26$

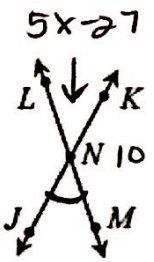
$\frac{24}{4}=\frac{4x}{4}$ $x=6$

7. Find the value of x.



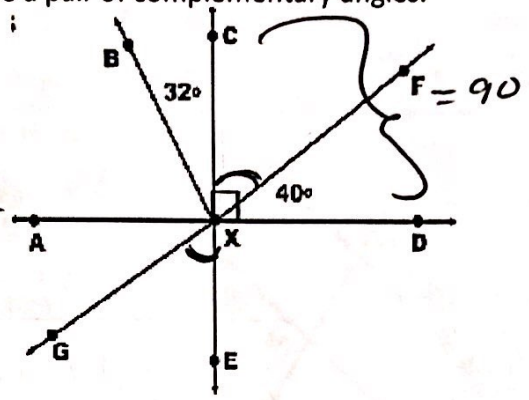
$12x-18 = 5x+59$
$-5x \quad -5x$
$7x-18 = 59$
$+18 \quad +18$
$\frac{7x}{7} = \frac{77}{7}$
$x = 11$

8. If $m\angle LNK = (5x-27)°$ and $m\angle KNM = (10x-3)°$, find $m\angle JNM$.



$5x-27+10x-3 = 180$
$15x-30 = 180$
$+30 \quad +30$
$15x = 210$
$x = 14$
$5(14)-27$
$70-27 = 43°$

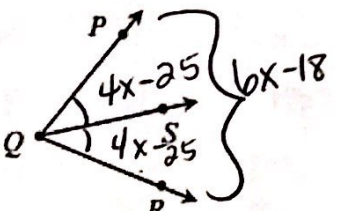
9. Name a pair of vertical angles using the diagram below. Name a pair of complementary angles.



Vertical:
∠CXF, ∠GXE

Complementary
∠CXF and ∠FXD

10. If $\overrightarrow{QS}$ bisects $\angle PQR$, $m\angle PQS = 4x-25$, $m\angle PQR = 6x-18$. Find $m\angle SQR$.



$4x-25+4x-25 = 6x-18$
$8x-50 = 6x-18$
$-6x \quad -6x$
$2x-50 = -18$
$+50 \quad +50$
$\frac{2x}{2} = \frac{32}{2}$
$x = 16$
$4(16)-25$
$64-25$
$39°$

Topic 2: Proofs

Write the letter of the property, definition, or postulate that justifies each statement.
**Not all choices will be used, and some may be used more than once.

11. If $\angle ABC \cong \angle CBD$, then $\angle CBD \cong \angle ABC$ G (flip)

12. If $VW + WY = ZY$, and $VW + WY = XZ$, then $XZ = ZY$ H

13. If S is between R and T, then $RS + ST = RT$ K

14. If $JK + KL = MN + KL$, then $JK = MN$ B (−KL, −KL)

15. If $m\angle A = m\angle C$, and $m\angle C = m\angle D$, then $m\angle A = m\angle D$ H

16. If $PQ = QT$, then $PQ + RS = QT + RS$ A

17. $m\angle DEF = m\angle DEF$ F

18. If $\frac{1}{2}XZ = XY$, then $XZ = 2XY$ C

19. If $m\angle LMN = m\angle MNP$, then $\angle LMN \cong \angle MNP$ I

A.	Addition Property of Equality
B.	Subtraction Property of Equality
C.	Multiplication Property of Equality
D.	Division Property of Equality
E.	Substitution Property
F.	Reflexive Property (of = or ≅)
G.	Symmetric Property (of = or ≅)
H.	Transitive Property (of = or ≅)
I.	Definition of Congruence
J.	Definition of Midpoint
K.	Segment Addition Postulate
I.	Angle Addition Postulate

Topic 3: Parallel & Perpendicular Lines

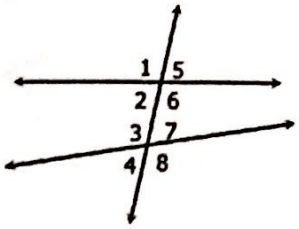
20. Use the diagram to the right to classify each pair of angles.

a. $\angle 1$ and $\angle 8$ alt ext.

b. $\angle 6$ and $\angle 7$ SSI

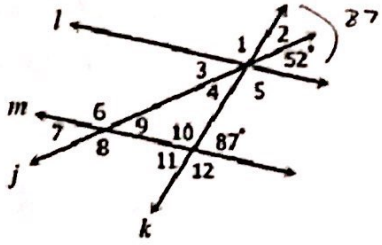
c. $\angle 2$ and $\angle 4$ corresponding

d. $\angle 3$ and $\angle 6$ alt. int.



21. If $l \parallel m$, find the measure of each missing angle.

a. $m\angle 1 =$ 93°	b. $m\angle 2 =$ 35°	c. $m\angle 3 =$ 52°
d. $m\angle 4 =$ 35°	e. $m\angle 5 =$ 93°	f. $m\angle 6 =$ 128°
g. $m\angle 7 =$ 52°	h. $m\angle 8 =$ 128°	i. $m\angle 9 =$ 52°
j. $m\angle 10 =$ 93°	k. $m\angle 11 =$ 87°	l. $m\angle 12 =$ 93°



22. If $q \parallel r$, solve for x.

$7x - 10 = 9x - 44$

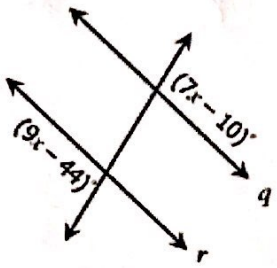
$-7x \quad -7x$

$-10 = 2x - 44$

$+44 \quad +44$

$\frac{34}{2} = \frac{2x}{2}$

$17 = x$



23. If $m \parallel n$, solve for x.

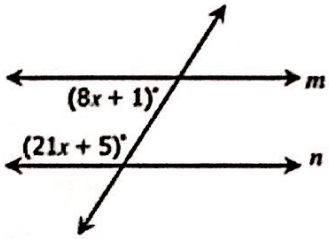
$8x + 1 + 21x + 5 = 180$

$29x + 6 = 180$

$-6 \quad -6$

$\frac{29x}{29} = \frac{174}{29}$

$x = 6$



24. Use the diagram to the right to answer the questions below.

a. If $m\angle 1 = 84$, what must $m\angle 5$ be in order for $a \parallel b$? 84° corresp.

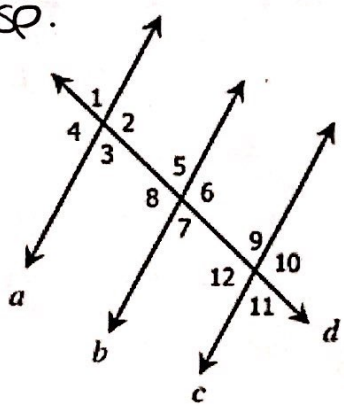
b. If $m\angle 2 = 109$, what must $m\angle 9$ be in order for $a \parallel c$? 71° SSI

c. If $m\angle 5 = 68$, what must $m\angle 11$ be in order for $c \parallel b$? 68° alt ext

d. If $m\angle 3 = m\angle 9$, what converse proves $a \parallel c$? alt. int.

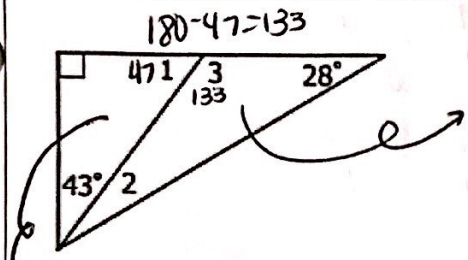
e. If $m\angle 8 = m\angle 12$, what converse proves $c \parallel b$? corresp.

f. If $m\angle 2 + m\angle 5 = 180$, what converse proves $a \parallel b$? SSI



Topic 4: Triangles and Angles

25. Find the measure of each numbered angle.



180-47=133

133+28=161

180-161

19

90+43=133

180-133

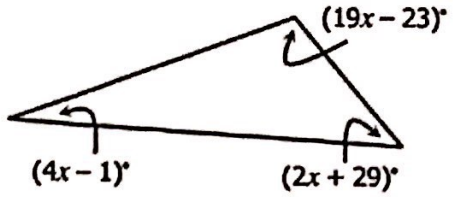
47

$m\angle 1 = 47^\circ$

$m\angle 2 = 19^\circ$

$m\angle 3 = 133^\circ$

26. Find the value of x.



$19x - 23 + 2x + 29 + 4x - 1 = 180$

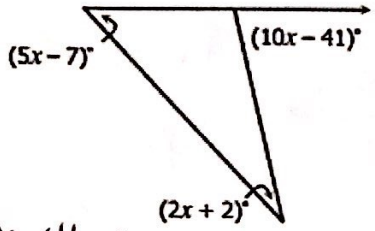
$25x + 5 = 180$

$-5 \quad -5$

$25x = 175$

$\boxed{x = 7}$

27. Find the value of x.



$10x - 41 = 5x - 7 + 2x + 2$

$10x - 41 = 7x - 5$

$-7x \quad -7x$

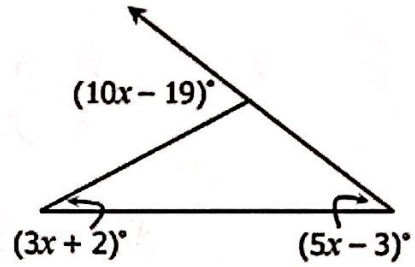
$3x - 41 = -5$

$+41 \quad +41$

$\frac{3x}{3} = \frac{36}{3}$

$\boxed{x = 12}$

28. Find the value of x.



$10x - 19 = 3x + 2 + 5x - 3$

$10x - 19 = 8x - 1$

$-8x \quad -8x$

$2x - 19 = -1$

$+19 \quad +19$

$\frac{2x}{2} = \frac{18}{2}$

$\boxed{x = 9}$