

Math 2 Homework

Name: Key
Date: _____

Midsegments & Review

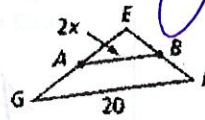
Example: (use as a guide to help you solve the problems below)

\overline{AB} is a midsegment of $\triangle GEF$. What is the value of x ? $2AB = GF$

$$2(2x) = 20$$

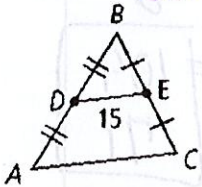
$$4x = 20$$

$$x = 5$$

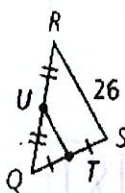


Find the length of the indicated segment

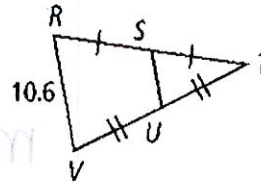
1. $AC = 30$



2. $TU = 13$

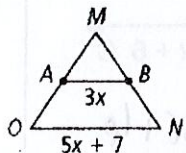


3. $SU = 5.3$



If \overline{AB} is a midsegment, find the value of x .

4.

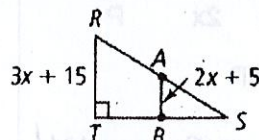


$$2(3x) = 5x + 7$$

$$6x = 5x + 7$$

$$x = 7$$

5.

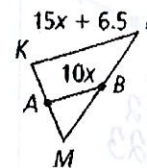


$$2(2x + 5) = 3x + 15$$

$$4x + 10 = 3x + 15$$

$$x = 5$$

6.



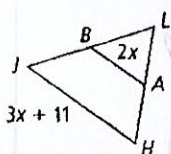
$$x = 1.3$$

$$2(10x) = 15x + 6.5$$

$$20x = 15x + 6.5$$

$$5x = 6.5$$

7.

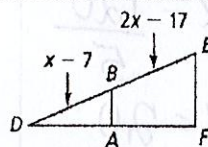


$$x = 11$$

$$2(2x) = 3x + 11$$

$$4x = 3x + 11$$

8.

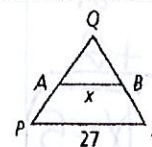


$$x - 7 = 2x - 17$$

$$10 = x$$

$$x = 10$$

9.

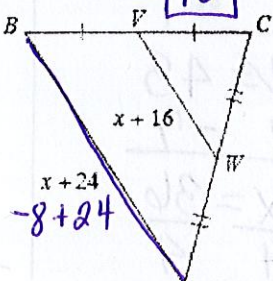


$$2x = 27$$

$$x = 13.5$$

Find the indicated length for #s 10-12

10. Find BD = 16

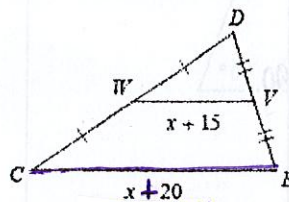


$$2(x + 16) = x + 24$$

$$2x + 32 = x + 24$$

$$x = -8$$

11. Find CE = 10

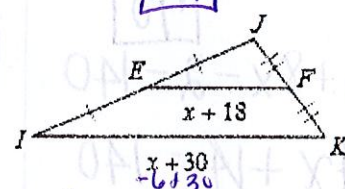


$$2(x + 15) = x + 20$$

$$2x + 30 = x + 20$$

$$x = -10$$

12. Find IK = 24

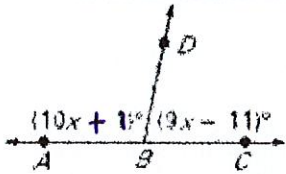


$$2(x + 18) = x + 30$$

$$2x + 36 = x + 30$$

$$x = -6$$

13. Find x



$$19x - 10 = 180$$

$$19x = 190$$

$$\boxed{x = 10}$$

$= 90^\circ$

14. If $\angle 1$ and $\angle 2$ are complementary angles and $m\angle 1 = 4x - 2$ and $m\angle 2 = 11x + 17$. Find the $m\angle 1$.

$$4x - 2 + 11x + 17 = 90$$

$$15x + 15 = 90$$

$$15x = 75$$

$$x = 5$$

$$m\angle 1 = 4(5) - 2 = \boxed{18}$$

15. The measure of one angle is 38° less than the measure of its supplement. Find the measure of each angle.

$$x$$

$$x - 38$$

$$2x - 38 = 180$$

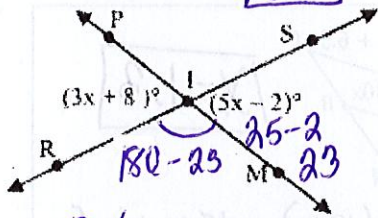
$$\frac{2x}{2} = \frac{218}{2}$$

$$x = \boxed{109}$$

$$71$$

16. Find x and $m\angle RIM$

$$\boxed{157}$$



$$3x + 8 = 5x - 2$$

$$-3x \quad -3x$$

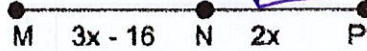
$$8 = 2x - 2$$

$$+2 \quad +2$$

$$\frac{10}{2} = \frac{2x}{2} \quad \boxed{x = 5}$$

17.

$$\boxed{148}$$



MP = 104, Find NP

$$3x - 16 + 2x = 104$$

$$5x - 16 = 104$$

$$+16 \quad +16$$

$$\frac{5x}{5} = \frac{120}{5}$$

$$x = 24$$

18. If B is the midpoint of \overline{AC} find the length of AC



$$5x - 9 = 2x + 6$$

$$3x = 15$$

$$x = 5$$

$$[5(5) - 9] + [2(5) + 6]$$

$$16 + 16$$

$$\boxed{32}$$

19.

$m\angle KUV = 6x + 16$, $m\angle TUV = 140^\circ$, and $m\angle TUK = 8x - 2$. Find $m\angle KUV$.



$$6(9) + 16$$

$$54 + 16$$

$$\boxed{70}$$

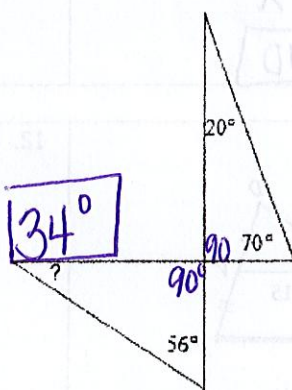
$$6x + 16 + 8x - 2 = 140$$

$$14x + 14 = 140$$

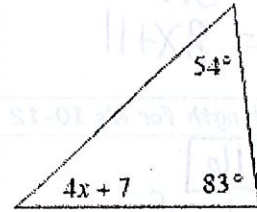
$$\frac{14x}{14} = \frac{126}{14}$$

$$x = 9$$

20. Find the missing angle



21. Solve for x



$$4x + 7 = 43$$

$$\frac{4x}{4} = \frac{36}{4}$$

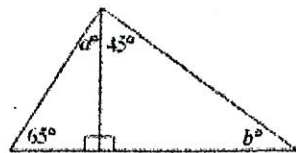
$$x = 9$$

$$\boxed{x = 9}$$

22. State whether the 3 numbers can form a triangle. Explain.
7, 4, 3

Omit

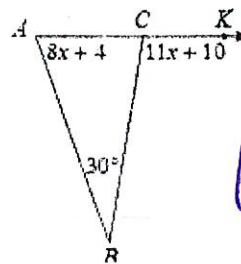
23. Find a and b



$$a = 25^\circ$$

$$b = 45^\circ$$

24. Find $m\angle A$



$$m\angle A = 8(8) + 4$$

$$m\angle A = 64 + 4$$

$$m\angle A = 68$$

$$30 + 8x + 4 = 11x + 10$$

$$8x + 34 = 11x + 10$$

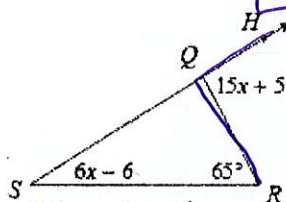
$$24 = 3x$$

$$x = 8$$

25. Find $m\angle HQR$.

$$= 15(6) + 5$$

$$= 95^\circ$$

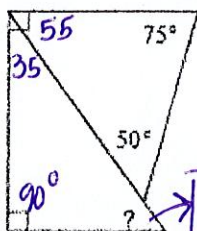


$$15x + 5 = 6x + 59$$

$$9x = 54$$

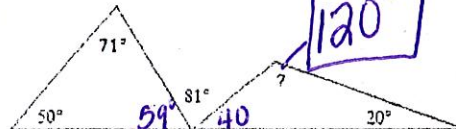
$$x = 6$$

26. Find the missing angle



$$55^\circ$$

27. Find the missing angle

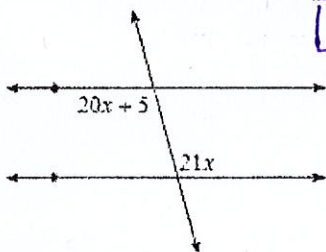


$$120^\circ$$

28. Solve for x

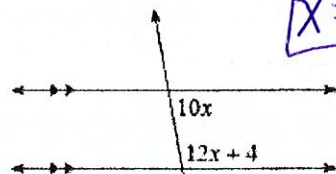
$$20x + 5 = 21x$$

$$5 = x$$



29. Solve for x

$$x = 8$$



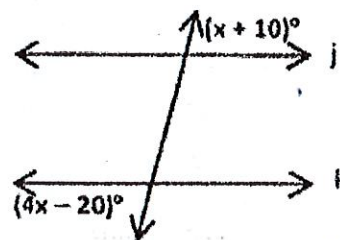
$$10x + 12x + 4 = 180$$

$$22x + 4 = 180$$

$$\frac{-4}{-4}$$

$$22x = 176$$

30. Given l and k are parallel, find x

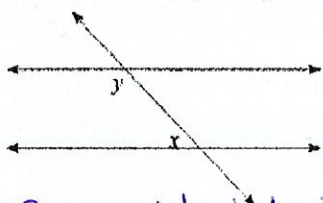


$$4x - 20 = x + 10$$

$$3x = 30$$

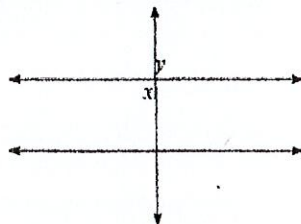
$$x = 10$$

31. Name the relationship between x and y



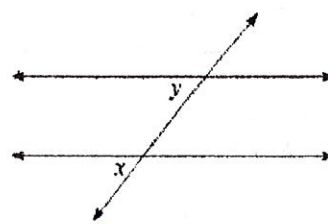
Same side interior

32. Name the relationship between x and y



Vertical

33. Name the relationship between x and y



Corresponding