

Name KEY

Date \_\_\_\_\_

Period \_\_\_\_\_

Geometry w/Trig

Unit 1 Test Review

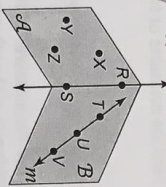
1. Determine whether each statement is *true* or *false*. If *false*, explain why the statement is false.
- a. If two segments are congruent, then their lengths are equal. True

- b. Two angles that are complementary angles are adjacent. False

Complementary angles do not have to be adjacent

ex:  $\overset{A}{\curvearrowright} \overset{B}{\curvearrowright}$   $\angle A$  &  $\angle B$  are comp  $\angle$ s because their measures have a sum of  $90^\circ$  but they are not adjacent.

Use the diagram to the right to complete the questions that follow.



3. What is another name for line  $m$ ?  $\overleftrightarrow{TV}, \overleftrightarrow{UW}$

4. Name the intersection of planes  $A$  and  $B$ .  $\overleftrightarrow{RS}$

5. Name a pair of opposite rays.  $\overrightarrow{DT}$  &  $\overrightarrow{TV}$

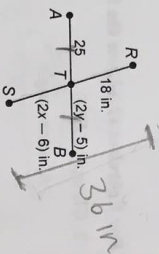
6. What is another name for plane  $Q$ ? Plane  $TSV$

7. Find the value of  $x$  and  $y$  if  $\overline{RS}$  bisects  $\overline{AB}$  and  $RS = 36$  in.  
Note:  $TB = (2y - 5)$  in. and  $TS = (2x - 6)$  in.

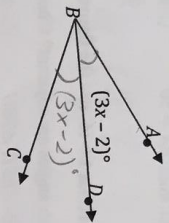
Since  $\overline{RS}$  bisects  $\overline{AB}$ ,  $\overline{AT} \cong \overline{TB}$

$25 = 2y - 5$   
 $30 = 2y$   
 $\boxed{15 = y}$

$18 + 2x - 6 = 36$   
 $12 + 2x = 36$   
 $2x = 24$   
 $\boxed{x = 12}$



8. Find  $m\angle DBC$  if  $m\angle ABC = (5x + 3)^\circ$  and  $\overline{BD}$  bisects  $\angle ABC$ .



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

$$6x - 4 = 5x + 3$$

$$\boxed{x = 7}$$

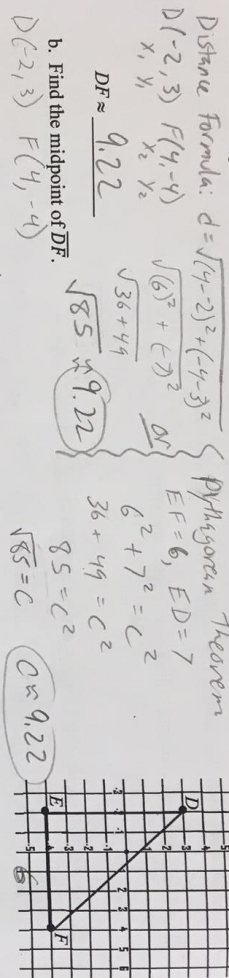
$$m\angle DBC = 3(7) - 2$$

$$= 21 - 2$$

$$\boxed{m\angle DBC = 19^\circ}$$

9. Use  $ADEF$  shown on the graph to the right.

a. Find the length of  $\overline{DF}$ . Show all work and round your answer to the nearest hundredth.



b. Find the midpoint of  $\overline{DF}$ .

$M\left(\frac{-2+4}{2}, \frac{3+(-4)}{2}\right) \Rightarrow \left(\frac{2}{2}, \frac{-1}{2}\right) \Rightarrow (1, -\frac{1}{2})$

10. Find the measures of two complementary angles if one angle is twenty-five degrees more than the other angle.

Other  $\angle: x$   
 One  $\angle: x + 25$

$Sum = 90^\circ$   
 $x + x + 25 = 90$   
 $2x + 25 = 90$   
 $2x = 65$   
 $x = 32.5$

Other  $\angle: 32.5^\circ$   
 One  $\angle: 32.5 + 25 = 57.5^\circ$

11. Find the measures of two supplementary angles if the measure of one angle is five more degrees than three times the measure of the other angle.

Other  $\angle: x$   
 One  $\angle: 3x + 5$

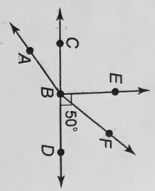
$Sum = 180$   
 $x + 3x + 5 = 180$   
 $4x + 5 = 180$   
 $4x = 175$   
 $x = 43.75$

Other:  $43.75^\circ$   
 One:  $3(43.75) + 5 = 136.25^\circ$

For Exercises 12-13, use the figure at the right. Note:  $A, B,$  and  $F$  are noncollinear.

12. Classify  $\angle EBF$ .

- A) acute angle
- B) right angle
- C) obtuse angle
- D) straight angle



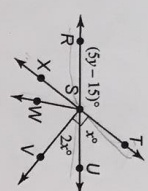
13. Which statements are true? Check all that apply.

- $m\angle CBA = 50^\circ$
- $m\angle EBF = 40^\circ$
- $m\angle ABD = 100^\circ$
- $m\angle CBF = 130^\circ$
- $90 - 50 = 40$
- $90 + 40 = 130$

For Exercises 14-16, use the figure at the right.

14. Which angles are adjacent? Check all that apply.

- $\angle RST, \angle TSU$
- $\angle ZTSU, \angle USV$
- $\angle RSX, \angle LTSU$
- $\angle RSX, \angle XSW$



15. What are all angle relationships between  $\angle TSU$  and  $\angle USX$ ? Check all that apply.

- adjacent
- supplementary
- complementary
- form a linear pair

$x + 2x = 90$   
 $3x = 90$   
 $x = 30$

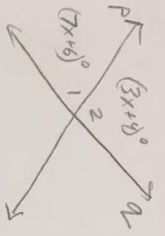
$5y - 15 + 30 = 180$   
 $5y + 15 = 180$   
 $5y = 165$   
 $y = 33$

16. Find the values of  $x$  and  $y$ .

- A)  $x = 30, y = 21$
- B)  $x = 60, y = 39$
- C)  $x = 30, y = 33$
- D)  $x = 60, y = 27$

17. Lines  $p$  and  $q$  intersect to form adjacent supplementary angles 1 and 2. Also,  $m\angle 1 = (7x + 6)^\circ$  and  $m\angle 2 = (3x + 4)^\circ$ .

a. Find the value of  $x$ .



$$7x + 6 + 3x + 4 = 180$$

$$10x + 10 = 180$$

$$10x = 170$$

$$x = 17$$

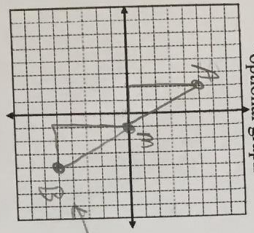
b. Are lines  $p$  and  $q$  perpendicular? Explain.

$$7(17) + 6 = 125$$

$$3(17) + 4 = 55$$

No,  $\angle 1$  and  $\angle 2$  are not right angles so  $p$  cannot be perpendicular to  $q$ .

18. Fiona jogs every morning on a track that can be represented by a straight line. Her starting coordinates are  $(-2, 5)$  and her halfway mark is  $(1, 0)$ . What are her ending coordinates?



\*optional graph\*  
Use graph to count vertical change & horizontal change

Use midpoint formula to find missing endpoint  $B(x_2, y_2)$

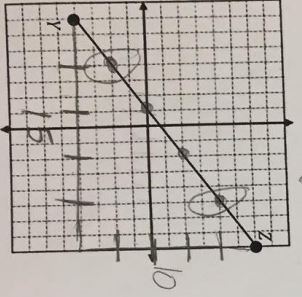
$$\frac{-2 + x_2}{2} = 1 \quad \frac{5 + y_2}{2} = 0$$

$$-2 + x_2 = 2 \quad 5 + y_2 = 0$$

$$x_2 = 4 \quad y_2 = -5$$

$$(4, -5)$$

19. Suppose  $A$  lies on  $\overline{YZ}$ . Find a possible set of coordinates for  $A$  so that it divides  $\overline{YZ}$  into two segments whose lengths are in a 4:1 ratio.



5 parts

$$\frac{15}{5} = 3 \quad (4, -2) \text{ or } (5, 4)$$

$$\frac{10}{5} = 2$$