Angle Relationships TEST REVIEW Schmidt

1. Find the measure of each angle if the m<HFK=90° and m<HFG=135°.

 Ray FJ is an angle bisector of <HFK.



a. m<KFG= \_\_\_\_\_\_\_\_\_\_\_\_ b. m<JFK= \_\_\_\_\_\_\_\_\_\_\_

c. m<HFE= \_\_\_\_\_\_\_\_\_\_\_\_ d. m<EFK= \_\_\_\_\_\_\_\_\_\_\_



1e.

 Find the m<KLM = \_\_\_\_\_\_\_\_\_\_\_

2.



3. Classify all that apply, adjacent, vertical, linear pairs, ONE right angle, complementary, supplementary, and/or congruent.

a. <1 and <5 b. <GFH and <CFG

c. <2 and <5 d. <2 and <FCD

4. Two angles are complementary. The measure of one angle is 21 more than twice the measure of the other angle. Find the measures of the angles. (Show all work)

5. The measure of the supplement of an angle is 36 less than the measure of the angle. Find the measures of the angle. (Show all work).

**Directions:** For questions #6-10, show all geometry, justify the set up, and show all work to receive full credit!

6 a. 6b.







 x = \_\_\_\_\_\_\_\_\_\_ x = \_\_\_\_\_\_\_\_\_\_

7. $\vec{HL}$ bisects <KHI.

a. b.







d = \_\_\_\_\_\_\_\_\_\_ a = \_\_\_\_\_\_\_\_\_\_

c. If $\vec{HL}$ bisects <KHI, determine if the following statements are true or false.



 <KHL$ ≅$ <LHI \_\_\_\_\_ L is in the interior of <KHI \_\_\_\_\_

 m<KHL = 50$°$ and m<KHI = 110$°$ \_\_\_\_\_\_ m<LHI = $\frac{1}{2}$(m<KHI) \_\_\_\_\_\_\_

8a. 8b. ***Using information from 8a***., find x, if

 m<VSW= 8x – 2.





y= \_\_\_\_\_\_\_\_\_\_\_\_\_\_

$∠TSU=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$ x = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

8c. Using the y and x from 8a and 8b above, find the value of 4x – 10y = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. In the figure to the right, $\vec{XP}$ and $\vec{XT}$ are opposite rays.

a. If *<SXT=3a – 4, <RXS=2a + 5, <RXT=111°.* Find *a* and the measure of <RXS.



a = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

<RXS = \_\_\_\_\_\_\_\_\_\_\_\_\_

b. If *<QXR= a + 10, <QXS = 4a – 1*, and *<RXS=91°,* Find *a* and <QXS.



a = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

<QXS = \_\_\_\_\_\_\_\_\_\_\_\_\_

10.

 a)





x = \_\_\_\_\_\_\_\_\_\_\_\_

b.





x = \_\_\_\_\_\_\_\_\_\_\_\_\_

<PQT = \_\_\_\_\_\_\_\_\_\_\_\_\_



11.



12.

13. If *w //v*, give the justification for each statement.

a. <2<12 b. <8<14 c. <5<13

d. <10<2 e. <7 + <16 =180° f. <16<6

14. If m<3=43°, find the measures of each angle. Fill them in on the picture and list them out in order.



$$∠6=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠7=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠8=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠9=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠10=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠11=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠12=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠13=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠14=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠15=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠16=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠1=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠2=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠3=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠4=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

$$∠5=\\_\\_\\_\\_\\_\\_\\_\\_\\_\\_$$

****Directions: Find the value of the variable, show your geometry and justification for each.

15.

 12x-3

 105ᵒ

 x= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



16.

 -6+12x

 11x

**** x= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17.

 7x+18

 6x+19

 x= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: Find the value of the variable and the measure of the angle, show your geometry and justification for each.

18.

 53x-1

 38x-1

 x= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

****19.

 22x+7

 24x-1

 x= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 m<BCF = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



20.

 15x+5 14x+12

 x= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 m< TPQ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21. If <3 is complementary to <2 and <1 is supplementary to <3. Find x and y if <1= 13x+4, <2=5y+4 and <3= 6x - 14

x = \_\_\_\_\_\_\_\_

y = \_\_\_\_\_\_\_\_

22. *Set up an equation that models the given situation, then find the measures of both angles in the situation.*

a. The measure of one angle is 7 times the measure of its compliment. Find the measure of each angle.

b. The measure of one angle is 15 times the measure of its supplement. Find the measure of each angle.

c. The measure of one angle is 47 less than the measure of its supplement. Find the measure of each angle.

d. Find the measure of two complementary angles if one angle is 12 more than the other.

$\vec{BA} and \vec{BC} are opposite rays.$$\vec{BF} $ **bisects <CBE and** $\vec{BD} $**bisects <ABE. Justify your steps.**

23. If $m<EBF=8x^{2}-9x-5 $and $m<CBF=4-3x$, find the possible value(s), if any, of the $m<EBC$. You must check your work for credit.



$\vec{BA} and \vec{BC} are opposite rays.$$\vec{BF} $ **bisects <CBE and** $\vec{BD} $**bisects <ABE. Justify your steps.**

24. If $m<2=10x^{2}+5x+7$and $m<1=3x^{2}-17x+4$, find the possible value(s), if any, of $m<ABE$. You must check your work.



25. If $∠1=(x-4)^{2} $and $∠3=9°$, find the possible value(s) of x, $∠1$, and $∠2. $Note: This figure is not drawn to scale.



26. If $∠1=x^{2}+2x $and $∠2=4x+140$, find the possible value(s) of x, $∠3$, and $∠4. $Note: This figure is not drawn to scale.

