Geometry- Mrs. Tilus   Name: _____
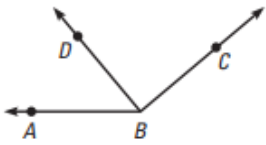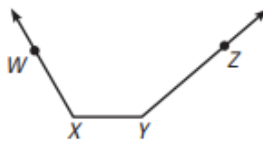Unit 1- Worksheet #5: Angle Pair Relationships

1. Are all linear pairs supplementary angles? Are all supplementary angles linear pairs? Justify your answer with an explanation or examples.

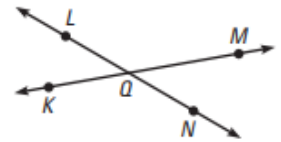Tell whether the indicated angles are adjacent.

2. $\angle ABD$ and $\angle DBC$

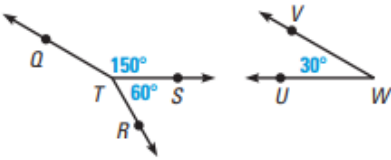3. $\angle WXY$ and $\angle XYZ$

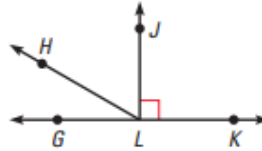4. $\angle LQM$ and $\angle NQM$

Name a pair of complementary angles, a pair of supplementary angles and a pair of adjacent angles.
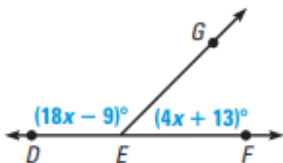
5.

6.

$\angle 1$ and $\angle 2$ are complementary angles and $\angle 2$ and $\angle 3$ are supplementary angles. Given the measure of $\angle 1$, find $m\angle 2$ and $m\angle 3$. Show your work!
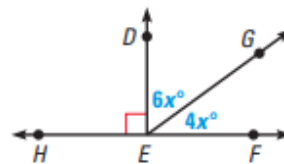
7. $m\angle 1 = 80°$

8. $m\angle 1 = 6°$

Find $m\angle DEG$ and $m\angle GEF$. Show your work!

9.

10.

Use the diagram below. Tell whether the angles are vertial, a linear pair or neither.

11. ∠1 and ∠4   12. ∠1 and ∠2

13. ∠3 and ∠5   14. ∠2 and ∠3

15. ∠7, ∠8 and ∠9   16. ∠5 and ∠6

17. ∠6 and ∠7   18. ∠4 and ∠9
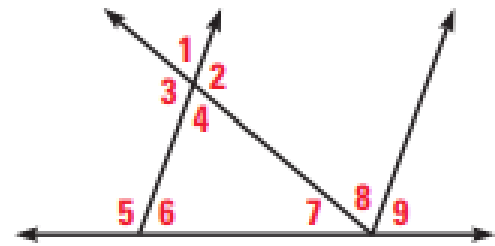
19. Describe and correct the error made in finding the value of *x*.

$$x° + 3x° = 180°$$
$$4x = 180$$
$$x = 45$$
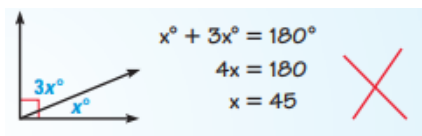
Find the values of *x* and *y*. <u>Show your work!</u>

20.
$(9x + 20)°$
$2y°$ $7x°$

21.
$(y + 75)°$
$(3x + 7)°$ $(5x − 35)°$
$(3y + 5)°$
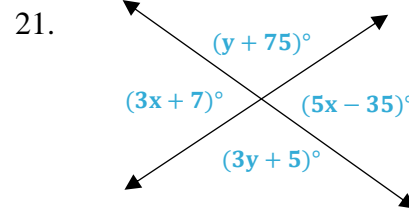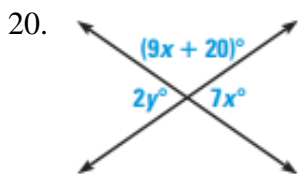
Tell whether the statement is always, sometimes or never true.

22. An obtuse angles has a complement. 23. A straight angle has a complement.

24. An angle has a supplement.   25. The complement of an acute angle is an acute angle.

26. Two complementary angles form a linear pair.   27. The supplement of an acute angles is an obtuse angle.

28. The length of a shadow changes as the sun rises. In the diagram below, the length of $\overline{CB}$ is the length of a shadow. The end of the shadow is the vertex of ∠ABC, which is formed by the ground and the sun's rays. Describe how the shadow and the angle changes as the sun rises.