Tutor-USA.com Worksheet **Name: _____**
Geometry **Date: _____**
Angles – Supplementary, Complementary, Vertical, Adjacent – Proofs

1) Two angles whose measures have a sum of 180 are _____.

2) Two angles whose measures have a sum of 90 are _____.

3) _____ angles are two coplanar angles with a common side, common vertex, and no common interior points.

Write an equation and solve.

4) $\angle A$ and $\angle B$ are complementary. $m\angle A = 2x - 5$ and $m\angle B = x + 15$. Find the value of x, $m\angle A, m\angle B$

5) A supplement of an angle is 4 times the complement of the angle. Find the measure of the angle. Then find the measure of its complement and supplement.

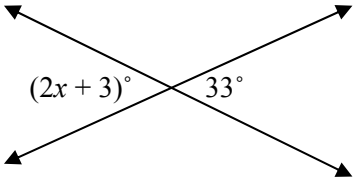
6) The measure of a complement of an angle is three more than twice the measure of the angle. Find the measure of the angle and its complement.

7) A supplement of an angle is four times the measure of the angle. Find the measure of the angle.

8) Vertical Angles are always _____. (complementary, supplementary, or congruent).

Find the value of *x*.

9)



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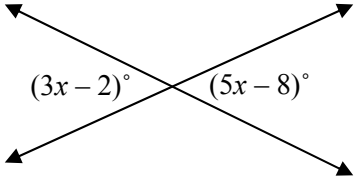

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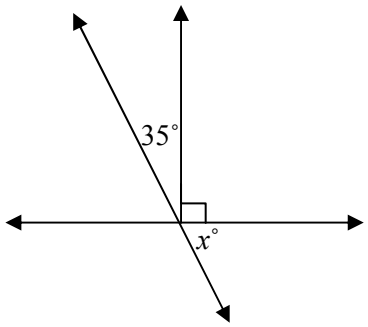

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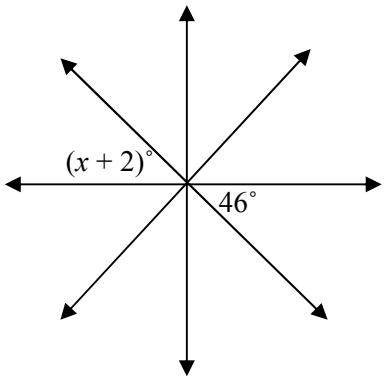
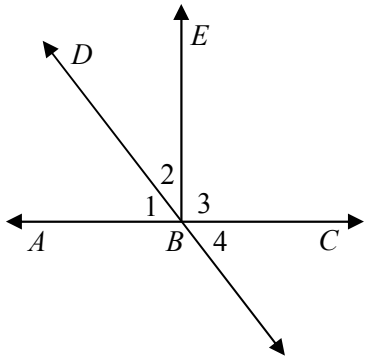


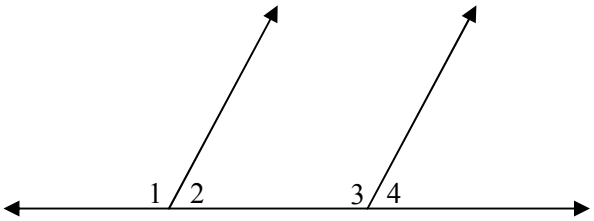
Complete a two-column proof.

13) Given: $\overrightarrow{BD}$ bisects $\angle ABE$
Prove: $\angle 2 \cong \angle 4$



Complete a two-column proof.

14) Given: $\angle 2$ is supplementary to $\angle 3$
Prove: $\angle 1 \cong \angle 3$



Answer Key

1) Supplementary
2) Complementary
3) Adjacent
4) $x = 20,\ m\angle A = 55, m\angle B = 35$
5) Angle = 60, complement = 30, supplement = 120
6) Angle = 29, complement = 61
7) Angle = 36
8) Congruent
9) 15
10) 3
11) 55
12) 44
13)
$\overrightarrow{BD}$ bisects $\angle ABE$ ..... given
$\angle 1 \cong \angle 2$ ..... definition of angle bisector
$\angle 1 \cong \angle 4$ ..... vertical angles are congruent
$\angle 2 \cong \angle 4$ ..... substitution
14)
$\angle 2$ is supplementary to $\angle 3$ ..... given
$m\angle 1 + m\angle 2 = 180$ ..... Angle Addition Postulate
$\angle 2$ is supplementary to $\angle 1$ ..... Definition of Supplementary
$\angle 1 \cong \angle 3$ ..... If two angles are supp. to same angle, then they are congruent

