Name _____

2.REV.1 ~ Lessons 2.1 & 2.2

Past due on _____ Period _____

LESSON 2.1 ~ FOUNDATIONS FOR PROOF

1) Explain the difference between inductive and deductive reasoning.

Determine whether inductive reasoning or deductive reasoning is used in each situation. Then determine whether the conclusion is correct and explain your reasoning.

2) Ava read an article that said eating too much sugar can lead to tooth decay and cavities. Ava noticed that her little brother Phillip eats a lot of sugar. She concludes that Phillip's teeth will decay and develop cavities.

3) Jason sees a line of ten school buses and notices that each is yellow. He concludes that all school buses must be yellow.

4) Jose is shown the first six numbers of a series of numbers: 7, 11, 15, 19, 23, 27. He concludes that the general rule for the series is $a_n = 4n + 3$.

In the following situation, identity whether each person is using inductive or deductive reasoning. Explain your reasoning.
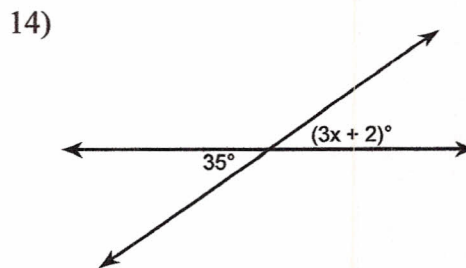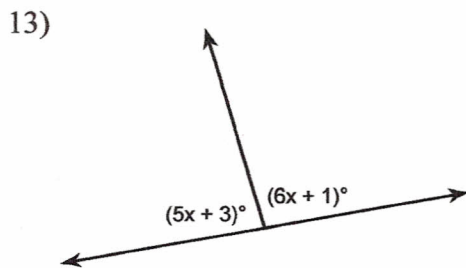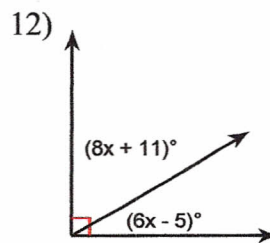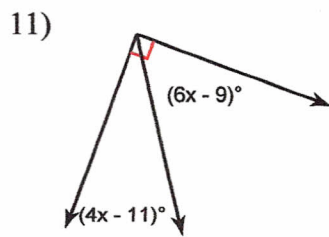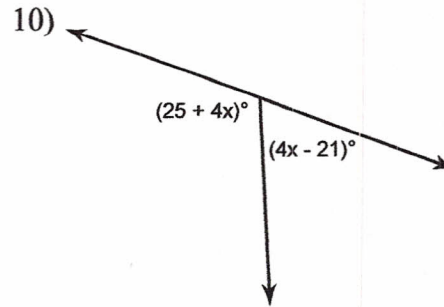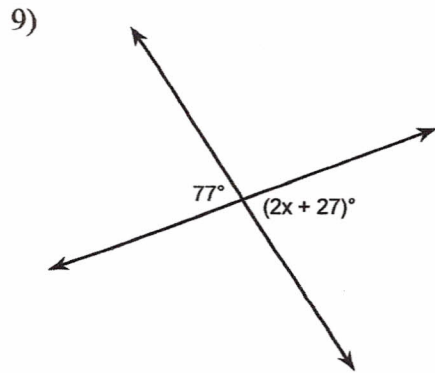
5) As a child, the only frogs Emily ever saw were green. Emily told Juan that all frogs are green. When Juan visited the zoo and saw a blue poison dart frog, he concluded that it must be something other than a frog.

Write each statement in proposition form. Identify the hypothesis and the conclusion of each conditional statement.

6) Three points are all located on the same line. So, the points are collinear points.

7) Two angles share a common vertex and a common side. So, the angles are adjacent angles.

8) A ray divides an angle into two congruent angles. So, the ray is an angle bisector.

LESSON 2.2 ~ SPECIAL ANGLES & POSTULATES

Use complementary, linear pair, or vertical angle relationships to set up and solve an equation to find the value of *x*. Determine the angle measures in each diagram.
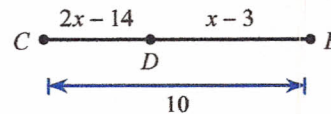
9)

77° (2x + 27)°

10)

(25 + 4x)° (4x - 21)°

11)

(6x - 9)°
(4x - 11)°

12)

(8x + 11)°
(6x - 5)°

13)

(5x + 3)° (6x + 1)°

14)

(3x + 2)°
35°

Use the Segment Addition Postulate to find the value of *x*. Then find the indicated segment length.

15) Find *CE*

$x + 6$ 5
C •————•————• E
      D
   $3x + 3$

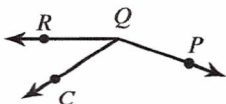16) Find *DE*

$2x - 14$ $x - 3$
C •————•————• E
      D
      10
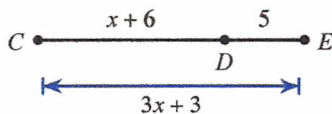
Use the Angle Addition Postulate to set up and solve an equation to find the value of *x*. Find the measure of the indicated angle.

17) $m\angle CQR = 32°$, $m\angle PQC = 9x + 21$, and $m\angle PQR = 12x + 17$. Find $m\angle PQR$.

R   Q
        P
  C

18) $m\angle ABS = 10x - 5$, $m\angle SBC = 5x + 8$, and $m\angle ABC = 123°$. Find $m\angle SBC$.

S   C

A   B