

Name: _____ Period: _____ Date: _____

2.4 Algebraic Proofs

For 1-2, write an algebraic proof to solve for x.

1) $4(5x - 9) = -2(x + 7)$

2) $3(4x + 7) = 5(3x + 3)$

3) Prove $y = (3x + 14)/9$ Given: $9x + 21 = 3(-7 + 9y)$

4) Prove the radius of a circle is equal to the circumference divided by 2π ($r = C/2\pi$) algebraically given $C = d\pi$.

5) Prove the number of sides in a polygon $n = (S + 360)/180$ given $S = (n-2)180$.

For 6-10, name the property each statement illustrates.

6) If $3x = 21$, then $x = 7$.

7) If Grace is Rachel's sister, then Rachel is Grace's sister.

8) Mr. Scevola = Mr. Scevola.

9) If Eli and Odell are teammates, and Odell and Prince are teammates, then Eli and Prince are teammates.

10) If $3(x + 2)$, then $3x + 6$.

11) Which of the following illustrates the symmetric property of equality? Select all that apply.

(a) If $AC = RS$, then $RS = AC$

(b) If $x = 9$, then $9 = x$

(c) If $AD = BC$, then $DA = CB$

(d) $AB = BA$

(e) If $AB = LM$ and $LM = RT$, then $AB = RT$

(f) If $XY = EF$, then $FE = XY$