

**Homework** 2.3 Solving Equations Using Proof Justifications

Identify in each statement the correct property of operation or property of equality – Commutative Property of Addition, Commutative Property of Multiplication, Associative Property of Addition, Association Property of Multiplication, Additive Inverse Property, Multiplicative Inverse Property, Distributive Property, Reflective Property, Symmetric Property, Transitive Property.

1.  $x = x$

2.  $4w + 5y = 5y + 4w$

3.  $5 * \frac{1}{5} = 1$

4.  $5(a + b) = 5a + 5b$

5.  $b - b = 0$

6.  $ab = ba$

7.  $a + b = b + a$

8.  $(2a + 3b) + 4c = 2a + (3b + 4c)$

9.  $a = 4, b = a, \text{ then } b = 4$

10. *If*  $3 = x, \text{ then } x = 3$

11.  $ab(c) = b(ac)$

12.  $\frac{1}{2} * 2 = 1$

13.  $4 - 2a = 2(2 - a)$

14. *If*  $12 = 17 - 5, \text{ then } 17 - 5 = 12$

15.  $-a + a = 0$

16.  $x + 2 = x + 2$

17.  $6a = a6$

18.  $a - 6 = -6 + a$

19.  $\frac{1}{y} * y = 1$

20. *If*  $5 = n, n = m, \text{ then } m = 5$

Identify each step in the process of solving the linear equation by using the correct properties.

Equation
$-7x + 22 = 50$
$-7x = 28$
$x = -4$

21.

22.

Equation
$-3 - \frac{x}{6} = 4$
$-\frac{x}{6} = 7$
$-x = 42$
$x = -42$

28.

Equation
$76 = 5x - 15 + 2x$
$76 = 5x + 2x - 15$
$76 = 7x - 15$
$91 = 7x$
$13 = x$
$x = 13$

23.

24.

25.

26.

27.

Equation
$5x + 3(x + 4) = 28$
$5x + 3x + 12 = 28$
$8x + 12 = 28$
<input type="text"/>
$x = 2$

29.

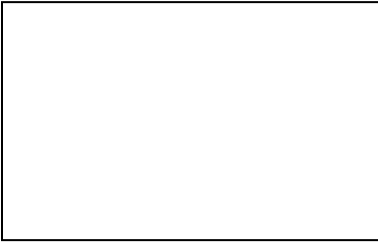
30.

31.

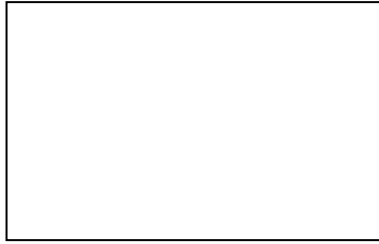
32.

Solve the following linear equations.

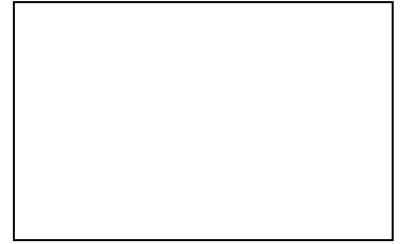
34.  $5x + 1 = 31$




35.  $3x - 1 = 8$



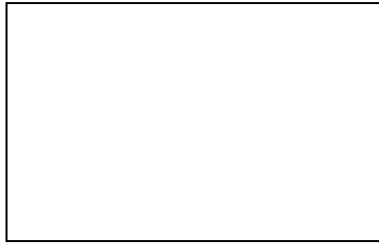
37.  $7x = 60 + 2x$




38.  $3x = 72 - 3x$



39.  $6x + 4 = 20 - 2x$



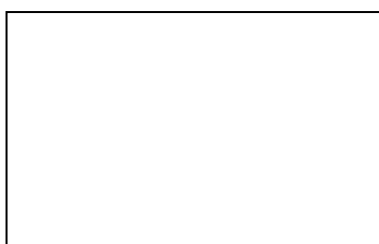
40.  $6x + 3 = 23 + x$



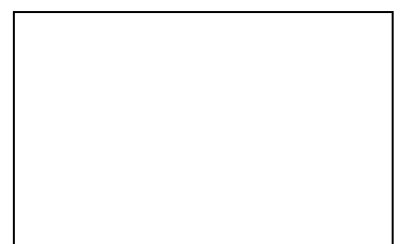
42.  $5x + 4 = 2x + 17$



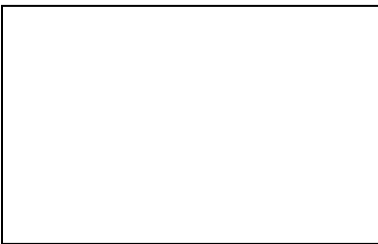
43.  $5x + 11 = 20x - 64$



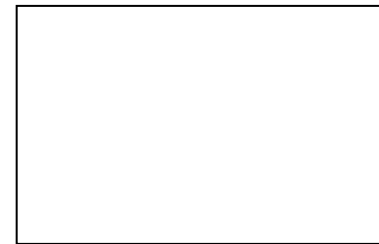
44.  $28 - x = 17 + 3x$



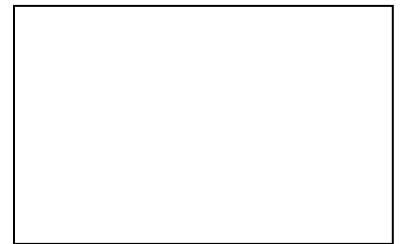
45.  $5(x + 2) = 25$



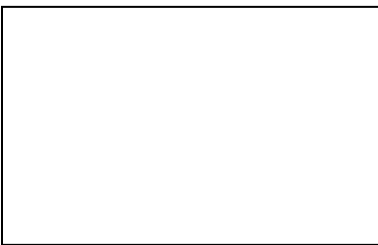
46.  $2(2x + 10) = 40$




47.  $3(2x - 5) = 21$



48.  $4(5x - 3) = 7(2x + 3)$



49.  $3(4 + x) = 5(10 + x)$



50.  $2(3x - 4) = 4x + 3$

