An Introduction to Equations Assignment

Tell whether each equation is true, false, or open. Explain.

1. $4t + 6 = 10$
2. $14 - 7 = 27 - 21$
3. $-11 + 4 = -7 + 15$

Find the solution of each equation.

4. $-8x + 4 = 12$
5. $7 + (-5x) = -33$
6. $4x = 21 + x$

Use a table to find the solution of each equation.

7. $5x - 11 = 4$
8. $7x - 4 = 38$
9. $3x - 2 = -8$

Use a table to find two consecutive integers between which the solution lies.

10. $14x - 66 = 40$
11. $3x + 4 = 36$
12. $7x + 8 = 68$

Find the solution of each equation using a table. If the solution lies between two consecutive integers, identify those integers.

13. $2x + 13 = 24$
14. $x - 8 = 25$

15. $6x - 8 = 31$
16. $19 + 2x = 31$

Write an equation for each sentence.

17. The ratio of nine and a number y is equal to the square of a number x.

18. A number x more than seven is equal to the product of a number y and twenty.

19. The product of five and eight is equal to the product of twenty and a number y.

20. The sum of a number y and fourteen is negative six.

An Introduction to Equations Assignment

<mark>ANSWER</mark>

Tell whether each equation is true, false, or open. Explain.

1. $4t + 6 = 10$

   variable t
   OPEN

2. $14 - 7 = 27 - 21$

   $7 = 7$
   TRUE

3. $-11 + 4 = -7 + 15$

   $-7 \neq 8$
   FALSE

Find the solution of each equation.

4. $-8x + 4 = 12$

   $$-8x + 4 = 12$$
   $$-8x = 12 - 4$$
   $$-8x = 8$$
   $$\boxed{x = -1}$$

5. $7 + (-5x) = -33$

   $$7 + (-5x) = -33$$
   $$(-5x) = -33 - 7$$
   $$-5x = -40$$
   $$\boxed{x = 8}$$

6. $4x = 21 + x$

   $$4x = 21 + x$$
   $$4x - x = 21$$
   $$3x = 21$$
   $$\boxed{x = 7}$$

Use a table to find the solution of each equation.

7. $5x - 11 = 4$

x	$= 5x - 11$
2	$= 5(2) - 11$ $= 10 - 11$ $= -1$
3	$= 5(3) - 11$ $= 15 - 11$ $= 4$
4	$= 5(4) - 11$ $= 20 - 11$ $= 9$

$\boxed{x = 3}$

8. $7x - 4 = 38$

x	$= 7x - 4$
4	$= 7(4) - 4$ $= 28 - 4$ $= 24$
5	$= 7(5) - 4$ $= 35 - 4$ $= 31$
6	$= 7(6) - 4$ $= 42 - 4$ $= 38$

$\boxed{x = 6}$

9. $3x - 2 = -8$

x	$= 3x - 2$
-1	$= 3(-1) - 2$ $= -3 - 2$ $= -5$
-2	$= 3(-2) - 2$ $= -6 - 2$ $= -8$
-3	$= 3(-3) - 2$ $= -9 - 2$ $= -11$

$\boxed{x = -2}$

Use a table to find two consecutive integers between which the solution lies.

10. $14x - 66 = 40$

x	$= 14x - 66$
7	$= 14(7) - 66$ $= 98 - 66$ $= 32$
8	$= 14(8) - 66$ $= 112 - 66$ $= 46$
9	$= 14(9) - 66$ $= 126 - 66$ $= 60$

$\boxed{7 < x < 8}$

11. $3x + 4 = 36$

x	$= 3x + 4$
10	$= 3(10) + 4$ $= 30 + 4$ $= 34$
11	$= 3(11) + 4$ $= 33 + 4$ $= 37$
12	$= 3(12) + 4$ $= 36 + 4$ $= 40$

$\boxed{10 < x < 11}$

12. $7x + 8 = 68$

x	$= 7x + 8$
8	$= 7(8) + 8$ $= 56 + 8$ $= 64$
9	$= 7(9) + 8$ $= 63 + 8$ $= 71$
10	$= 7(10) + 8$ $= 70 + 8$ $= 78$

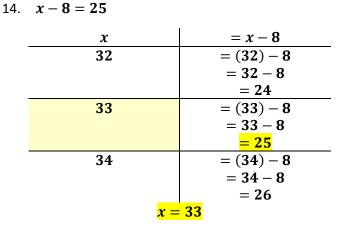$\boxed{8 < x < 9}$
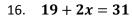
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An Introduction to Equations Assignment

Find the solution of each equation using a table. If the solution lies between two consecutive integers, identify those integers.

13. $2x + 13 = 24$

x	$= 2x + 13$
5	$= 2(5) + 13$ $= 10 + 13$ $= 23$
6	$= 2(6) + 13$ $= 12 + 13$ $= 25$
7	$= 2(7) + 13$ $= 14 + 13$ $= 27$

$5 < x < 6$

14. $x - 8 = 25$

x	$= x - 8$
32	$= (32) - 8$ $= 32 - 8$ $= 24$
33	$= (33) - 8$ $= 33 - 8$ $= 25$
34	$= (34) - 8$ $= 34 - 8$ $= 26$

$x = 33$

15. $6x - 8 = 31$

x	$= 6x - 8$
6	$= 6(6) - 8$ $= 36 - 8$ $= 28$
7	$= 6(7) - 8$ $= 42 - 8$ $= 34$
8	$= 6(8) - 8$ $= 48 - 8$ $= 40$

$6 < x < 7$

16. $19 + 2x = 31$

x	$= 19 + 2x$
5	$= 19 + 2(5)$ $= 19 + 10$ $= 29$
6	$= 19 + 2(6)$ $= 19 + 12$ $= 31$
7	$= 19 + 2(7)$ $= 19 + 14$ $= 33$

$x = 6$

Write an equation for each sentence.

17. The ratio of nine and a number y is equal to the square of a number x. $\frac{9}{y} = x^2$

18. A number x more than seven is equal to the product of a number y and twenty. $x + 7 = 20y$

19. The product of five and eight is equal to the product of twenty and a number y. $5(8) = 20y$

20. The sum of a number y and fourteen is negative six. $y + 14 = -6$