

A.A.22: Solving Equations 2: Solve all types of linear equations in one variable

- 1 Which value of p is the solution of $5p - 1 = 2p + 20$?
- 2 What is the value of x in the equation $2(x - 4) = 4(2x + 1)$?
- 3 If $12x = 4(x + 5)$, then x equals
- 4 Solve for x : $15x - 3(3x + 4) = 6$
- 5 What is the solution of the equation $3y - 5y + 10 = 36$?
- 6 If $2x + 5 = -25$ and $-3m - 6 = 48$, what is the product of x and m ?
- 7 If $2(x + 3) = x + 10$, then x equals
- 8 If $3(x - 2) = 2x + 6$, the value of x is
- 9 What is the value of x in the equation $2(x - 3) + 1 = 19$?
- 10 What is the solution for the equation $x + 1 = x + 2$?
- 11 If $-2x + 3 = 7$ and $3x + 1 = 5 + y$, the value of y is
- 12 What is the value of x in the equation $5(2x - 7) = 15x - 10$?
- 13 What is the value of x in the equation $13x - 2(x + 4) = 8x + 1$?
- 14 What is the value of p in the equation $2(3p - 4) = 10$?

15 What is the value of n in the equation $3n - 8 = 32 - n$?

16 What is the value of x in the equation $6(x - 2) = 36 - 10x$?

17 What is the value of p in the equation $8p + 2 = 4p - 10$?

18 What is the value of x in the equation $5 - 3x = -7$?

19 If $3(x + 2) - 2(x + 1) = 8$, the value of x is

20 What is the value of m in the equation $2m - (m + 1) = 0$

21 Debbie solved the linear equation $3(x + 4) - 2 = 16$ as follows:

[Line 1] $3(x + 4) - 2 = 16$

[Line 2] $3(x + 4) = 18$

[Line 3] $3x + 4 = 18$

[Line 4] $3x = 14$

[Line 5] $x = 4\frac{2}{3}$

She made an error between lines

22 Solve for x : $5(x - 2) = 2(10 + x)$

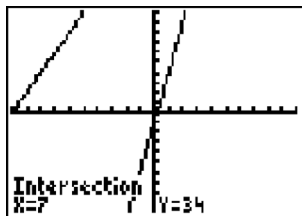
23 Solve for g : $3 + 2g = 5g - 9$

24 Solve algebraically for x : $3(x + 1) - 5x = 12 - (6x - 7)$

A.A.22: Solving Equations 2: Solve all types of linear equations in one variable Answer Section

1 ANS:

7



$$5p - 1 = 2p + 20$$

$$3p = 21$$

$$p = 7$$

REF: 080801ia

2 ANS:

-2

$$2(x - 4) = 4(2x + 1)$$

$$2x - 8 = 8x + 4$$

$$-12 = 6x$$

$$-2 = x$$

REF: 011106ia

3 ANS:

2.5

$$12x = 4(x + 5)$$

$$12x = 4x + 20$$

$$8x = 20$$

$$x = \frac{20}{8} = 2.5$$

REF: spring9802a

4 ANS:

3

$$15x - 3(3x + 4) = 6$$

$$15x - 9x - 12 = 6$$

$$6x = 18$$

$$x = 3$$

REF: 080015a

5 ANS:

 -13

$$3y - 5y + 10 = 36$$

$$-2y = 26$$

$$y = -13$$

REF: 060214a

6 ANS:

 270

$$2x + 5 = -25 \quad -3m - 6 = 48$$

$2x = -30$. $-3m = 54$. The product of x and m is 270.

$$x = -15 \quad m = -18$$

REF: 080219a

7 ANS:

 4

$$2(x + 3) = x + 10$$

$$2x + 6 = x + 10$$

$$x = 4$$

REF: 010401a

8 ANS:

 12

$$3(x - 2) = 2x + 6$$

$$3x - 6 = 2x + 6$$

$$x = 12$$

REF: 060404a

9 ANS:

 12

$$2(x - 3) + 1 = 19$$

$$2x - 6 = 18$$

$$2x = 24$$

$$x = 12$$

REF: 010904a

10 ANS:

There is no solution.

$$x + 1 = x + 2$$

$$1 \neq 2$$

REF: 010908a

11 ANS:

$$\begin{array}{rcl}
 -10 & & \\
 -2x + 3 = 7 & 3(-2) + 1 = 5 + y & \\
 -2x = 4 & -5 = 5 + y & \\
 x = -2 & y = -10 &
 \end{array}$$

REF: 060519a

12 ANS:

$$\begin{array}{rcl}
 -5 & & \\
 5(2x - 7) = 15x - 10 & & \\
 10x - 35 = 15x - 10 & & \\
 -25 = 5x & & \\
 x = -5 & &
 \end{array}$$

REF: 010601a

13 ANS:

$$\begin{array}{rcl}
 3 & & \\
 13x - 2(x + 4) = 8x + 1 & & \\
 13x - 2x - 8 = 8x + 1 & & \\
 11x = 8x + 9 & & \\
 3x = 9 & & \\
 x = 3 & &
 \end{array}$$

REF: 060602a

14 ANS:

$$\begin{array}{rcl}
 3 & & \\
 2(3p - 4) = 10 & & \\
 6p - 8 = 10 & & \\
 6p = 18 & & \\
 p = 3 & &
 \end{array}$$

REF: 080602a

15 ANS:

$$\begin{array}{rcl}
 10 & & \\
 3n - 8 = 32 - n & & \\
 4n = 40 & & \\
 n = 10 & &
 \end{array}$$

REF: 010705a

16 ANS:

$$\begin{aligned}
 &3 \\
 &6(x-2) = 36 - 10x \\
 &6x - 12 = 36 - 10x \\
 &16x = 48 \\
 &x = 3
 \end{aligned}$$

REF: 060702a

17 ANS:

$$\begin{aligned}
 &-3 \\
 &8p + 2 = 4p - 10 \\
 &4p = -12 \\
 &p = -3
 \end{aligned}$$

REF: 010807a

18 ANS:

$$\begin{aligned}
 &4 \\
 &5 - 3x = -7 \\
 &-3x = -12 \\
 &x = 4
 \end{aligned}$$

REF: 060810a

19 ANS:

$$\begin{aligned}
 &4 \\
 &3(x+2) - 2(x+1) = 8 \\
 &3x + 6 - 2x - 2 = 8 \\
 &x + 4 = 8 \\
 &x = 4
 \end{aligned}$$

REF: 060813a

20 ANS:

$$\begin{aligned}
 &1 \\
 &2m - (m + 1) = 0 \\
 &2m - m - 1 = 0 \\
 &m = 1
 \end{aligned}$$

REF: 080812a

21 ANS:

2 and 3
Debbie failed to distribute the 3 properly.

REF: 011009ia

22 ANS:

$$5(x - 2) = 2(10 + x)$$

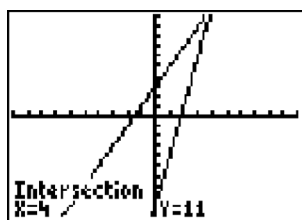
$$10. \quad 5x - 10 = 20 + 2x$$

$$3x = 30$$

$$x = 10$$

REF: 080731a

23 ANS:



$$4. \quad 3 + 2g = 5g - 9$$

$$12 = 3g$$

$$g = 4$$

REF: fall0732ia

24 ANS:

$$4. \quad 3(x + 1) - 5x = 12 - (6x - 7)$$

$$3x + 3 - 5x = 12 - 6x + 7$$

$$-2x + 3 = -6x + 19$$

$$4x = 16$$

$$x = 4$$

REF: 061238ia