Algebra 1

Chapter 6

Section 6-2 part 1

Find the value of the expression

$a = 3 , b = -1 , c = 4$

$5ab + c^2$

$5(3)(-1) + (4)^2$

$-15 + 16$

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Substituting Values: find the value of y

* x = 4

y = 5x - 10

y = 5(4) - 10

y = 20 - 10

* y = 10

(4, 10)

Substituting Values: find the value of each variable

* y = x - 2

11x - 6y = 7

11x - 6(x - 2) = 7

11x - 6x + 12 = 7

5x + 12 = 7

-12 -12

$\frac{5x}{5} = \frac{-5}{5}$

x = -1

y = -1 - 2

y = -3

(-1, -3)

Substituting Values: find the value of each variable

$x - 1 = 3y + 4$

$y - 3 = x$

$(y-3) - 1 = 3y + 4$

$y - 4 = 3y + 4$

$-3y \quad -4 \qquad -3y \quad +4$

$-2y = 8$

$\frac{-2y}{-2} = \frac{8}{-2}$

$y = -4$

$-4 - 3 = x$

$-7 = x$

$(-7, -4)$

Substituting Values: find the value of each variable

$2y + 5x = 2$

$13x + y = -20$

$-13x \qquad -13x$

$y = -13x - 20$

$2(-13x - 20) + 5x = 2$

$-26x - 40 + 5x = 2$

$-21x - 40 = 2$

$+40 \quad +40$

$\frac{-21x}{-21} = \frac{42}{-21}$

$x = -2$

$y = -13(-2) - 20$

$y = 26 - 20$

$y = 6$

$(-2, 6)$

Substituting Values: The Method

- Isolate ONE variable in ONE equation
- Substitute into the OTHER equation
- Simplify and solve for the FIRST variable

- Plug your solution back into ORIGINAL equation
- Simplify and solve for the SECOND variable

- SHOW YOUR WORK!

Solve the system of equations by substitution.

$2x - 6y = 3$

$0 = 10y - x - 2$

$+x \quad +x$

$x = 10y - 2$

$2(10y-2) - 6y = 3$

$20y - 4 - 6y = 3$

$14y - 4 = 3$

$+4 \quad +4$

$\frac{14}{14}y = \frac{7}{14}$

$y = \frac{1}{2}$

$x = 10\left(\frac{1}{2}\right) - 2$

$x = 5 - 2$

$x = 3$

$(3, \frac{1}{2})$

Solve the system of equations by substitution.

$3x + 5y = 1$

$x - 6y = -15$

Solve the system of equations by substitution.

$9x + 2y = 17$

$-x + y = 3$

Solve the system of equations by substitution.

$x + 2y = 70$

$y = 3x$

Solve the system of equations by substitution.

$-2x - 9y = 11$

$x + 18y = 8$