

Warm-up:
Solve.

1) $x - 3(x-1) + 8(x-3) = 6(x+1) + 1 - 4x$

Use substitution to solve the system of equations.

2) $\begin{cases} y = 6x - 11 \\ -2x - 3y = -7 \end{cases}$

$x - 3x + 3 + 8x - 24 =$
 $6x + 1 - 4x$
 $6x - 21 = 2x + 7$
 $4x - 21 = 7$
 $4x = 21 + 7 = 28$
 $x = \frac{28}{4} = 7$

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$-2x - 3(6x - 11) = -7$
 $-2x - 18x + 33 = -7$
 $-20x + 33 = -7$
 $-20x = -7 - 33$
 $-20x = -40$
 $x = \frac{-40}{-20} = 2 \rightarrow \textcircled{2}$

Substitute x value from eq # 2
 into eq # 1
 $y = 6x - 11$
 $y = 6(2) - 11$
 $y = 12 - 11$
 $y = 1$
 Solution $(2, 1)$

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Homework questions ?

$\frac{3}{5} - \frac{1}{4}$ Evaluate

$\frac{1}{2}$

$\frac{\frac{12-5}{20}}{\frac{1}{2}} = \frac{7/20}{1/2}$

$\frac{7}{20} \div \frac{1}{2}$
 $\frac{7}{20} \times \frac{2}{1} = \frac{14}{20} = \frac{7}{10} = 0.7$

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5) Write the equation for a line that passes through points $(5, 2)$ and $(-5, 14)$.

$y = mx + b$

$m = \frac{y_2 - y_1}{x_2 - x_1}$
 $m = \frac{14 - 2}{-5 - 5}$
 $m = \frac{12}{-10} = -\frac{6}{5}$

$y - y_1 = m(x - x_1)$
 $y - 2 = -\frac{6}{5}(x - 5)$
 $y - 2 = -\frac{6}{5}x + 6$
 $y = -\frac{6}{5}x + 8$

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6) Write the equation for a line that is parallel to $5x + 9y = -18$ and passes through the point $(9, 6)$.

$5x + 9y = -18$
 $9y = -5x - 18$
 $y = -\frac{5}{9}x - 2$
 $y = mx + b$
 $m_1 = -\frac{5}{9}$ $m_2 = m_1 = -\frac{5}{9}$
 $y - y_1 = m(x - x_1)$
 $y - 6 = -\frac{5}{9}(x - 9)$
 $y - 6 = -\frac{5}{9}x + 5$
 $y = -\frac{5}{9}x + 11$

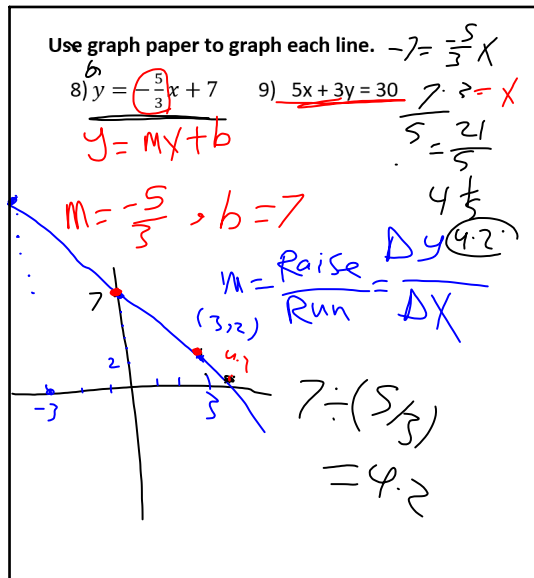
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7) Determine the slope of the line that is perpendicular to the line $8x - 3y = 15$.

Find m_1 first?

$8x - 3y = 15$
 $8x = 15 + 3y$
 $8x - 15 = 3y$
 $\frac{8x - 15}{3} = y$
 $\frac{8}{3}x - 5 = y$
 $mx + b = y$
 $m_2 = -\frac{1}{m_1} = -\frac{3}{8/3} = -\frac{9}{8}$

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Practice booklets

Use substitution to solve the system of equations.

$$2) \begin{cases} y = 6x - 11 \\ -2x - 3y = -7 \end{cases}$$

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$$3) \begin{cases} -3x - 3y = 3 \\ 5x + y = -17 \end{cases}$$

Use a graphing calculator to solve the system of equations. Round answer to nearest tenth.

$$4) \begin{cases} -5x + 7y = -15 \\ y = 3x + 6 \end{cases}$$

You must write each equation
in the form $y = mx + b$

$$-5x + 7y = -15$$

$$7y = 5x - 15$$

$$y_1 = \frac{5}{7}x - \frac{15}{7}$$

$$y_2 = 3x + 6$$

Enter in the graphing calculator

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Use properties of exponents to simplify each expression.

$$10) (7a^{-2})^3$$

$$11) \frac{6x^4y^2}{4x^{-1}y^7z^{-3}} = \frac{6x^4y^2}{4x^{-1}y^7z^{-3}} \cdot \frac{x^1z^3}{x^1z^3} = \frac{6x^5y^2z^3}{4y^7} = \frac{3x^5z^3}{2y^5}$$

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Quiz

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