

Top 10+ V8 key

Thursday, May 22, 2014

Name: *Key*
Period:

1) Simplify $-3^2 - 12 + (8 + 6 \div 2)$

$$\begin{aligned}
 & -3^2 - 12 + 11 \\
 & -9 - 12 + 11 \\
 & -21 + 11 \\
 & -10
 \end{aligned}$$

2) Simplify $2(x-7) - 5(3x+2) - 13$

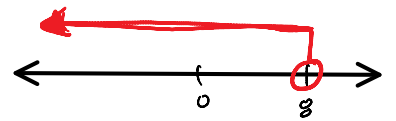
$$\begin{aligned}
 & 2x - 14 - 15x - 10 - 13 \\
 & 2x - 15x - 14 - 10 - 13 \\
 & -13x - 37
 \end{aligned}$$

3) Solve $-\frac{2}{3}x + 5 = \frac{7}{2} - \frac{5 \cdot 2}{12}$

$$\begin{aligned}
 -\frac{2}{3}x &= \frac{7}{2} - \frac{10}{12} \\
 -\frac{2}{3}x &= \frac{35}{12} - \frac{10}{12} \\
 -\frac{2}{3}x &= \frac{25}{12} \quad \left(\cdot \frac{-3}{2} \right) \\
 x &= \frac{9}{4} \text{ or } 2\frac{1}{4} \text{ or } 2.25
 \end{aligned}$$

4) Solve and graph on a number line

$$\begin{aligned}
 3(2x-1) + x &< 13 + 5x \\
 6x - 3 + x &< 13 + 5x \\
 7x - 3 &< 13 + 5x \\
 7x - 5x &< 13 + 3 \\
 2x &< 16 \\
 x &< 8
 \end{aligned}$$

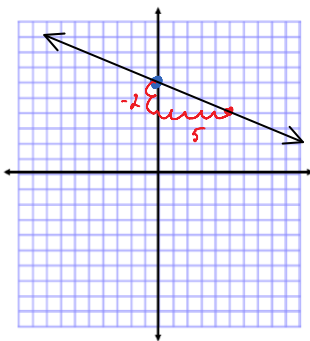


5) Graph the linear equation

$$y = -\frac{2}{5}x + 6$$

$$m = -\frac{2}{5}$$

$$b = 6$$



6) Identify the slope and y-intercept of the linear function

$$-2x - 3y = 15$$

$$\begin{aligned}
 -3y &= 2x + 15 \\
 y &= \frac{2}{3}x + 5
 \end{aligned}$$

$$\begin{aligned}
 \text{slope (m)} &= \frac{2}{3} \\
 \text{y-intercept (b)} &= 5
 \end{aligned}$$

already opposites

7) Solve the system of linear equations

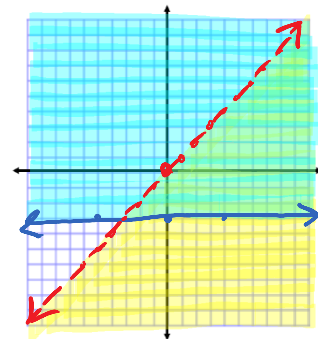
$$\begin{aligned}
 2x - 4y &= 10 \\
 3x + 4y &= 5 \\
 \hline
 5x &= 15 \\
 x &= 3
 \end{aligned}$$

$$\begin{aligned}
 2x - 4y &= 10 \\
 2(3) - 4y &= 10 \\
 6 - 4y &= 10 \\
 -4y &= 4 \\
 y &= -1
 \end{aligned}$$

$$(3, -1)$$

8) Graph the system of linear inequalities

- $y < x$
- $y \geq -3$

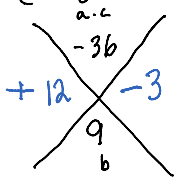


9) Find the zeroes of the quadratic function

$$0 = 2x^2 + 9x - 18$$

$a=2$
 $b=9$
 $c=-18$

$0 = 2x^2 + 12x - 3x - 18$ rewrite
 $0 = (2x^2 + 12x) + (-3x - 18)$ group
 $0 = 2x(x+6) + -3(x+6)$ factor
 $0 = (2x-3)(x+6)$ re-write
 $2x-3=0$ and $x+6=0$ set factors = 0
 $2x=3$ and $x=-6$ solve
 $x = \frac{3}{2}$ and $x = -6$



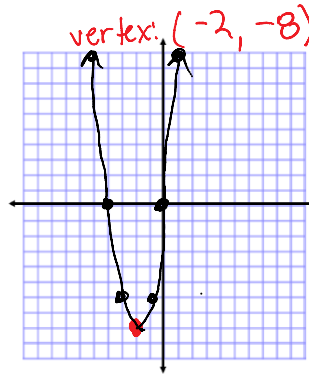
10) Graph the quadratic function

$$y = 2x^2 + 8x$$

① $x = \frac{-b}{2a}$
 $x = \frac{-8}{2(2)}$
 $x = -2$

② $y = 2x^2 + 8x$
 $y = 2(-2)^2 + 8(-2)$
 $y = 2(4) - 16$
 $y = 8 - 16$
 $y = -8$

③ $1(a) = 2$
 $3(a) = 6$
 $5(a) = 10$
 $a = 2$



11) Simplify the radical

$$5\sqrt{24} = 5\sqrt{4 \cdot 6} = 5\sqrt{4}\sqrt{6} = 5 \cdot 2\sqrt{6} = 10\sqrt{6}$$

12) Multiply the polynomial

$$(x+3)(x-7) = x(x-7) + 3(x-7) = x^2 - 7x + 3x - 21 = x^2 - 4x - 21$$

13) What is the probability of rolling an odd number **or** a multiple of 3 on a fair six-sided die?

1, 2, 3, 4, 5, 6 odd multiple of 3
 $\frac{4}{6} = \frac{2}{3}$

* Don't double count the 3 because it is odd and also a multiple of 3

1) Simplify using only positive exponents

$$\frac{-2x^3y^2}{4x^5y^{-2}z^0} = \frac{-2x^3y^2y^2}{4x^5 \cdot 1} = \frac{-2x^3y^4}{4x^5} = \frac{-y^4}{2x^2}$$

15) Write the equation of the line in slope-intercept form that passes through the points (1, 2) and (-3, 10)

① $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{10 - 2}{-3 - 1} = \frac{8}{-4} = -2$
 ② $y = -2x + b$
 $2 = -2(1) + b$
 $2 = -2 + b$
 $4 = b$
 ③ $y = mx + b$
 $y = -2x + 4$