Top 10 V6 key

Name:

Period:

1) Simplify

$$\frac{\sqrt{36}}{\sqrt{32+4}} \quad \frac{-10}{8-18}$$

$$5 - \sqrt{4 \cdot 8 + 4} + (8 - 6 \cdot 3)$$

$$5 - 6 + -10$$

$$-1 + -10$$

$$\boxed{-11}$$

2) Simplify

$$-2(3x - 8) - 5(2x + 4) + x$$

$$-6x + 16 \; -10x - 20 + x$$

$$-6x - 10x + x + 16 - 20$$

$$\boxed{-15x - 4}$$

3) Solve

$$\frac{3}{2}x + \frac{1}{2} = \frac{7}{2}$$

$$\frac{7}{2} - \frac{1}{2} = \frac{6}{2} = \boxed{3}$$

$$-\frac{1}{2} \qquad \frac{-1}{2}$$

$$\left(\frac{2}{3}\right)\frac{3}{2}x = \frac{3}{1}\left(\frac{2}{3}\right)$$

$$x = \frac{6}{3}$$

$$\boxed{x = 2}$$

4) Graph the linear equation

$$y = -\frac{2}{5}x + 1$$

x	y
① 0	1
② 5	-1
③ -5	3

① $y = -\frac{2}{5}(0) + 1$ $y = 1$
$y = 0 + 1$

② $y = -\frac{2}{5}(5) + 1$ $y = -1$
$y = -2 + 1$

③ $y = -\frac{2}{5}(-5) + 1$ $y = 3$
$y = 2 + 1$
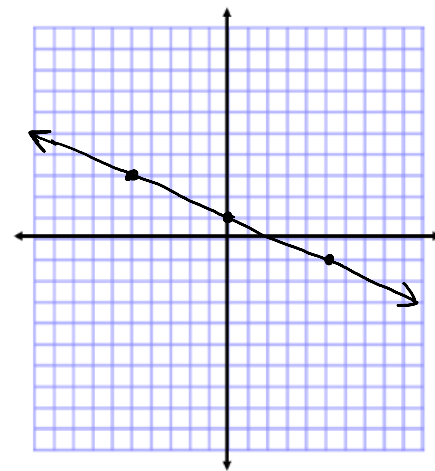
5) Solve and graph on a number line

$$-(x - 4) \geq 2x - 8 + 3x$$

$$-x + 4 \geq 2x + 3x - 8$$

$$-x + 4 \geq 5x - 8$$

$$-5x \qquad -5x$$

$$-6x + 4 \geq -8$$

$$-4 \qquad -4$$

$$-6x \geq -12$$

$$\frac{-6x}{-6} \geq \frac{-12}{-6}$$

$$\boxed{x \leq 2}$$

6) Solve the system of linear equations

$y = 3x + 1$
$y = x - 5$

$3x + 1 = x - 5$
$\quad -x \quad\quad -x$
$2x + 1 = -5$
$\quad -1 \quad -1$
$\dfrac{2x}{2} = \dfrac{-6}{2}$

$x = -3$

$y = x - 5$
$y = (-3) - 5$
$y = -8$

$\boxed{(-3, -8)}$

7) Graph the system of linear inequalities

• $y > -\dfrac{5}{2}x + 6$

○ $y < 2$
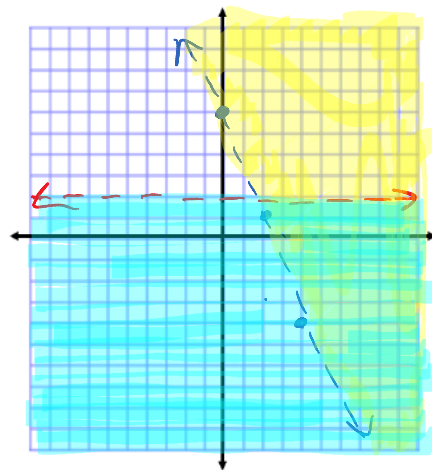
8) Find the zeroes of the quadratic function

$0 = x^2 - 8x - 20$

$a = 1$
$b = -8$
$c = -20$

$a \cdot c$
-20
$+2 \quad\times\quad -10$
-8
b
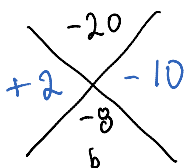
$0 = x^2 + 2x - 10x - 20$
$0 = (x^2 + 2x) + (-10x - 20)$
$0 = x(x + 2) + -10(x + 2)$
$0 = (x - 10)(x + 2)$
$x - 10 = 0$ and $x + 2 = 0$
$\boxed{x = 10 \quad \text{and} \quad x = -2}$

9) Graph the quadratic function

$y = -x^2 + 6x - 1$

① $x = \dfrac{-b}{2a}$

$x = \dfrac{-(6)}{2(-1)}$

$x = \dfrac{-6}{-2}$

$\boxed{x = 3}$

② $y = -x^2 + 6x - 1$
$y = -(3)^2 + 6(3) - 1$
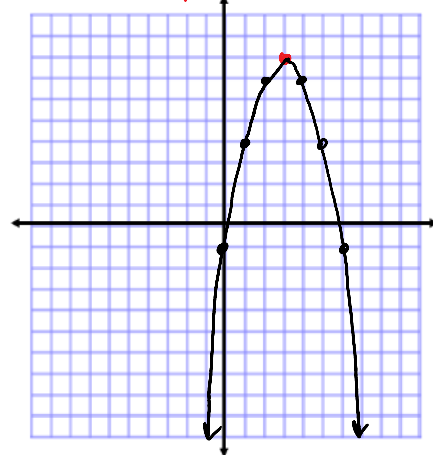$y = -9 + 18 - 1$
$y = 9 - 1$
$\boxed{y = 8}$

③ $1 \,(a) = -1$
$3 \,(a) = -3$
$5 \,(a) = -5$

$a = -1$

vertex $= (3, 8)$

10) Simplify the radical

$\sqrt{150} = \sqrt{25 \cdot 6} = \sqrt{25} \cdot \sqrt{6}$

$\boxed{5 \cdot \sqrt{6}}$

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$$\boxed{5\sqrt{6}}$$