Algebra 1 Honors Review

Day 1

Order of Operations

P arenthesis

E xponents

M ult.

D ivision

A ddition

S ubtraction

left → right

Evaluate. Simplify.

a) $3 + 2(7 - 11) \cdot 8$

$3 + 2(-4) \cdot 8$

$3 + -64$

-61

b) $\frac{5 \cdot 7}{20 \div 4 \cdot 3^2}$

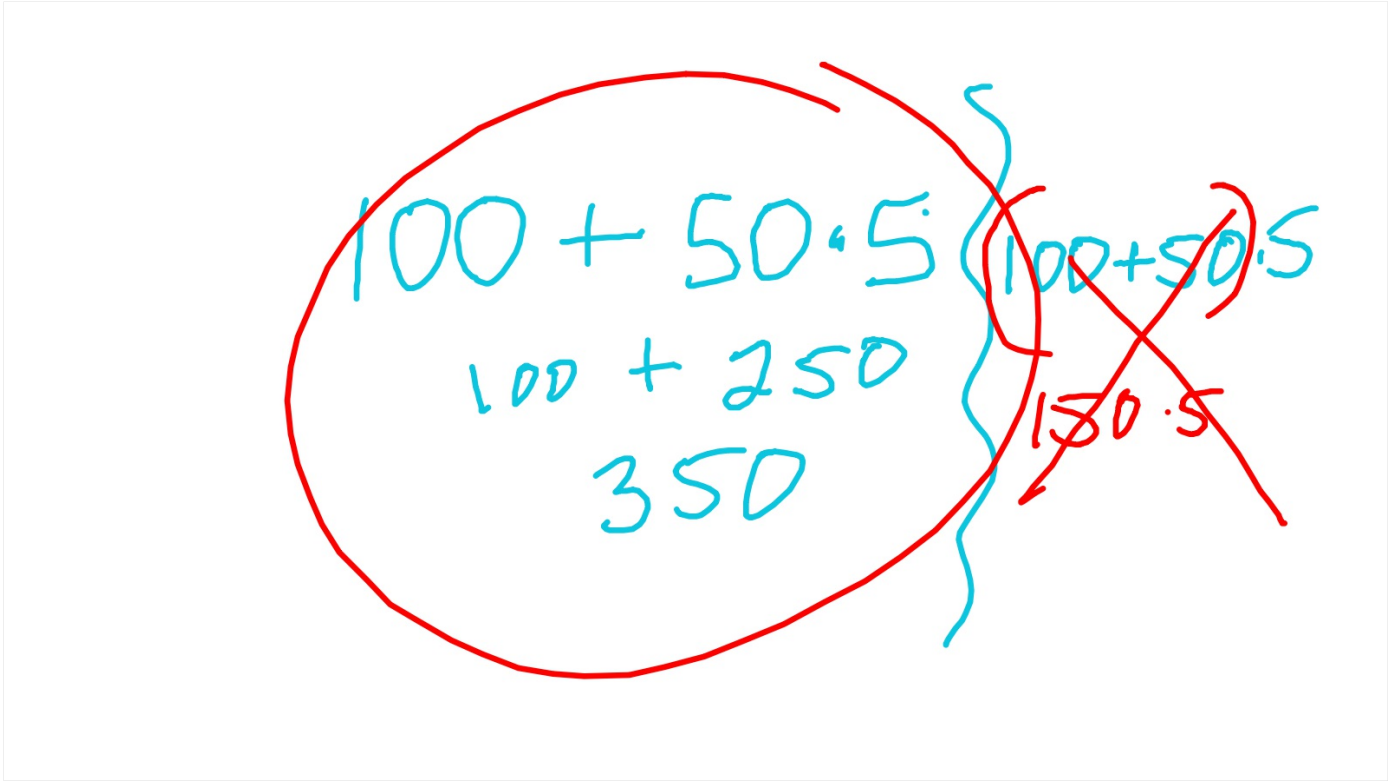
$\frac{35}{5 \cdot 9} = \frac{35}{45}$

$= \frac{7}{9}$

$\frac{10}{4}$ $\frac{5}{2}$ 2.5

$\rightarrow 4 \cdot (3)^2 = 4 \cdot 9$

$(4 \cdot 3)^2 = 12^2$


100 + 50·5
100 + 250
350
100+50·5
150·5

Evaluate each expression given x = 5, y = $\frac{5}{2}$, $z = -3, w = -2$

a) $\frac{y^2+xw}{z}$

b) $\frac{(xz)^2}{y} - yw^3$

c) $7 - (3w - z)^2$

$$\frac{\left(\frac{5}{2}\right)^2 + 5(-2)}{-3}$$

$$\frac{\left(\frac{25}{4} - 10\right)}{-3} = \frac{\frac{25}{4} - \frac{40}{4}}{-3} = \frac{\frac{-15}{4}}{-3} = \frac{-15}{4} \div -3$$

$$= -\frac{\cancel{15}^{5}}{4} \cdot \frac{-1}{\cancel{3}_{1}} = \frac{5}{4}$$

Evaluate each expression given x = 5, y = $\frac{5}{2}$, $z = -3, w = -2$

a) $\frac{y^2+xw}{z}$

b) $\frac{(xz)^2}{y} - yw^3$

c) $7 - (3w - z)^2$

$$\frac{(5 \cdot -3)^2}{\frac{5}{2}} - \frac{5}{2}(-2)^3$$

$$225 \div \frac{5}{2} - \frac{5}{1}\left(\frac{-2}{1}\right)^4$$

$$\left(\frac{225}{1} \cdot \frac{2}{5}\right) + 20$$

$$90 + 20 = 110$$

Evaluate each expression given x = 5, y = $\frac{5}{2}$, $z = -3, w = -2$

a) $\frac{y^2+xw}{z}$

b) $\frac{(xz)^2}{y} - yw^3$

c) $7 - (3w - z)^2$

$7 - (3(-2) - (-3))^2$

$7 - (-6+3)^2$

$7 - (-3)^2$

$7 - 9 = -2$

Solve.

a) $7x + 3(x - 4) = 7 + 2(x + 11)$

$7x + 3x - 12 = 7 + 2x + 22$

$10x - 12 = 2x + 29$

$-2x \quad +12 \quad -2x \quad +12$

$\frac{8x}{8} = \frac{41}{8}$

$x = 5\frac{1}{8} = 5.125$

b) $\frac{2}{3}(b + 6) = 7\left(\frac{b}{4} - 3\right)$

$12\left(\frac{2}{3}b + 4 = \frac{7}{4}b - 21\right)$

$8b + 48 = 21b - 252$

$-21b \quad -48 \quad -21b \quad -48$

$-13b = -300$

$b = \frac{300}{13}$

c) $6 = \frac{11x-14}{2x+5}$

$6(2x+5) = 11x-14$

$12x+30 = 11x-14$

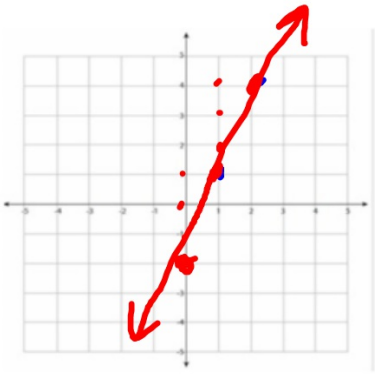
$x = -44$

Sketch each line.

a) $y = 3x - 2$

x	y
1	1
2	4

$y = mx + b$

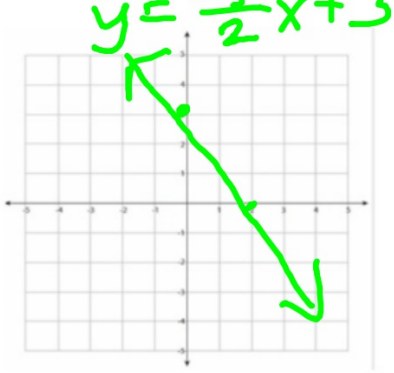


b) $3x + 2y = 6$

$-3x \quad -3x$

$\frac{2y}{2} = \frac{-3x}{2} + \frac{6}{2}$

$y = \frac{-3}{2}x + 3$



c) $y = 3$

$y = 0x + 3$

HOY

↑

zero slope

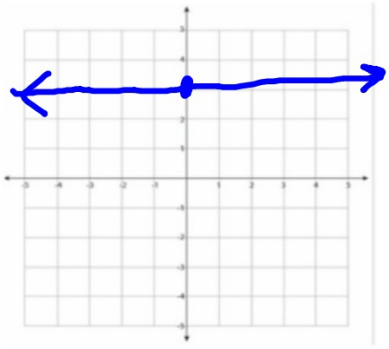
V

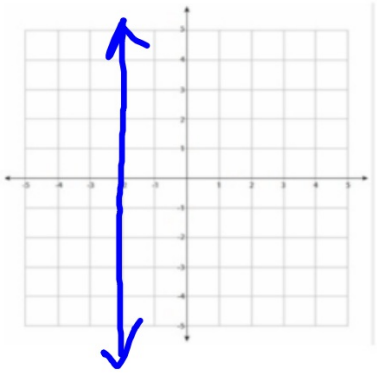
V

X

d) $x = -2$

undefined





1) $\dfrac{3-\frac{1}{4}}{\frac{2}{3}} = \dfrac{\left(\frac{3}{1}-\frac{1}{4}\right)}{\frac{2}{3}} = \dfrac{\frac{12}{4}-\frac{1}{4}}{\frac{2}{3}}$

$\frac{11}{4} \div \frac{2}{3} = \frac{11}{4} \cdot \frac{3}{2}$

$= \frac{33}{8}$

$$\frac{12\left(3-\frac{1}{4}\right)}{12\left(\frac{2}{3}\right)} \qquad \frac{12}{12}=1$$

$$\frac{36-3}{4\cdot 2}=\frac{33}{8}$$