

HAT
Board Review

1/8/16

Simplify: $\frac{2x^2 - 18}{x^2 - 5x + 6} \div \frac{2x^2 + 6x}{4x^3 - 4x^2 - 8x}$

$$4(x+1)$$

undefined when $x = 2, 3, 0, -1, -3$

We know that y varies inversely with x and directly with z .
If $y=1/8$, when $x=-2.5$, and $z=8$, find x when $y=-2$ and $z=3$.

$$K = \frac{-5}{128}$$

$$x = \frac{15}{256}$$

Simplify:
$$\frac{\frac{x^2 - 4x + 4}{y^2}}{\frac{6x - 12}{4y}}$$

$$\frac{2(x-2)}{3y}$$

undefined when
 $y=0, x=2$

Simplify: $\frac{x+1}{x^2+2x-15} - \frac{1}{2x+10}$

$$\frac{1}{2(x-3)}$$

undefined when

$$x = -5, 3$$

Simplify: $\frac{x + \frac{2}{x-3}}{x + \frac{6}{x-3}}$

$$\frac{(x-2)(x-1)}{x^2-3x+6}$$

Undefined when
 $x = 3$, OR when

$$x^2-3x+6=0 \text{ 😊}$$

A camper can paddle a canoe at a speed of 5 mph in still water. She travels 20 miles downstream in the same amount of time that it takes her to go 5 miles upstream. How fast is the current?

$$\text{Current} = 3 \text{ mph}$$

$$\frac{20}{5+c} = \frac{5}{5-c}$$

Solve: $\frac{x-4}{x-3} + \frac{x-2}{x-3} = x-3$

~~$x=3$~~ ← undef.
 $x=5$

Solve: $\frac{1}{x-7} - \frac{x}{x-2} = \frac{5}{x^2 - 9x + 14}$

$$x=1$$

$$x \neq 7$$

↑ undefined

A train traveled 120 miles from Freeport to Chicago and returned the same distance in a total time of 5 hours. If the train traveled 20 mph slower on the return trip, how fast did the train travel in each direction?

60mph on the way there.

40mph on the way back

Mrs. Long and Mrs. Felps are making garden markers as gifts for the rest of the math teachers. Mrs. Long has a little bit more experience so she can make 8 markers in one hour. Mrs. Felps can only make 5 markers in one hour. They need to make a total of 118 garden markers. How long will it take them working together?

$$8x + 5x = 118$$

$$13x = 118$$

$$x = 9.077$$

hours



