

Classwork / Homework

Pg. 496-497 #35-46 all

$$35) \quad x = 2$$

$$y = 3$$

$$f(x) = \frac{3x}{x-2}$$

$$36) \quad x = -2$$

$$y = 0$$

$$j(x) = \frac{1}{x+2}$$

$$37) \quad x = \pm 1$$

$$y = 1.5 \rightarrow \frac{3}{2}$$

hole $x = 0$

$$M(x) = \frac{x}{x(x-1)(x+1)} = \frac{3x^2 \cdot x}{2(x^3 - x)}$$

$$M(x) = \frac{3x^3}{2x^3 - 2x}$$

$$38) \quad x = 1$$

$$y = 3$$

hole $x = 2$

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

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

39) holes $x=0$
 $x=2$

$$K(x) = \frac{x(x-2)}{x(x-2)} = \frac{x(x^2-2x)}{x^2-2x}$$

$$K(x) = \frac{x^3-2x^2}{x^2-2x}$$

40) holes $x = 0$

$$x = 2$$

$$x = 3$$

$$f(x) = \frac{x \cdot x(x-2)(x-3)}{x(x-2)(x-3)}$$

$$f(x) = \frac{x^4 - 5x^3 + 6x^2}{x^3 - 5x^2 + 6x}$$

$$41) f(x) = \frac{1}{x^2 - 3x + c}$$

a) none

$$(-3)^2 - 4(1)(c) < 0$$

$$\begin{array}{r} 9 - 4c < 0 \\ -9 \quad \quad -9 \\ \hline \end{array}$$

$$\begin{array}{r} -4c < -9 \\ \hline -4 \quad \quad 4 \\ \hline \end{array}$$

$$c > \frac{9}{4}$$

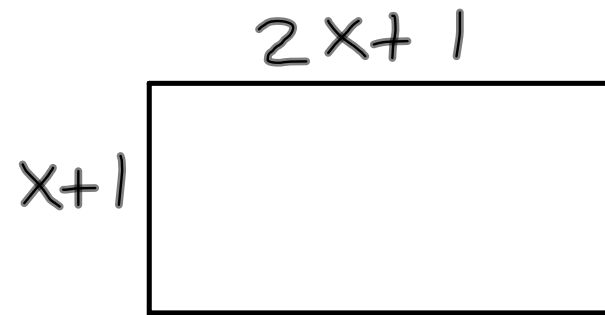
b) one

$$c = \frac{9}{4}$$

c) two

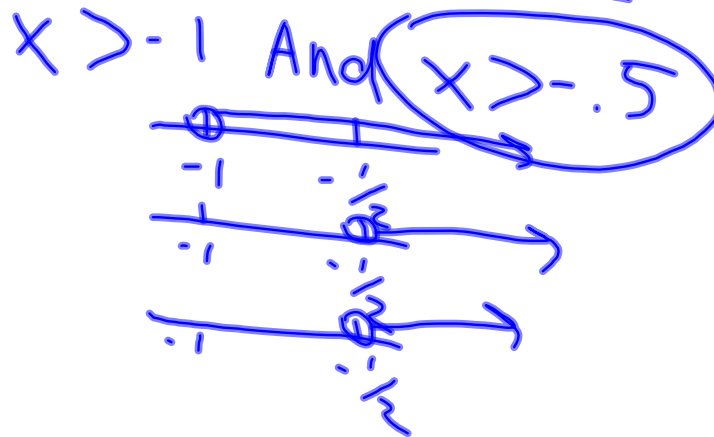
$$c < \frac{9}{4}$$

42)



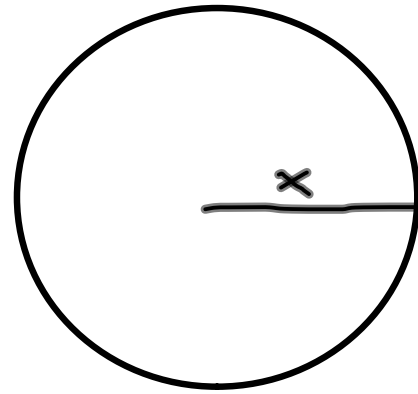
a) $R(x) = \frac{6x+4}{(x+1)(2x+1)} = \frac{6x+4}{2x^2+3x+1}$

b) $\frac{x+1 > 0}{-1 \quad -1}$ And $\frac{2x+1 > 0}{\frac{2x}{2} > -\frac{1}{2}}$



43)

$$a) R(x) = \frac{2\cancel{\pi}x}{\cancel{\pi}x^2} = \frac{2}{x}$$



$$b) x > 0; x > 0; x > 0$$

$$44) \quad C(x) = \frac{5.76}{72+x}$$

$$b) \quad \frac{5.76}{72+720} \approx .7\%$$

45) a) $T(x) = 11.45x + 250$

b) $C(x) = \frac{11.45x + 250}{x}$

46. a) a fraction with a polynomial on the top and bottom

b)

$$\begin{aligned} &.997 w_0 \\ &.994 w_0 \\ &.969 w_0 \end{aligned}$$

c)

$$\text{Earth} \left(\frac{6400}{6400+h} \right)^2 = 2 \left(\frac{6400}{6400+h} \right)^2$$

$$\frac{1}{2} = 2 \left(\frac{6400}{6400+h} \right)^2$$

$$\sqrt{\frac{1}{2}} = \sqrt{\left(\frac{6400}{6400+h} \right)^2}$$

$$\frac{1}{\sqrt{2}} = \frac{6400}{6400+h}$$

$$6400+h = 6400\sqrt{2}$$
$$\begin{array}{r} -6400 \\ \hline \end{array}$$

$$h = 6400\sqrt{2} - 6400$$

$$h \approx 2651 \text{ km}$$