Review Day #3 Answers

1a. substitute in 300 → $981

b. graph and find max @

(560, 1150)

↑

# of sweatshirts they should sell

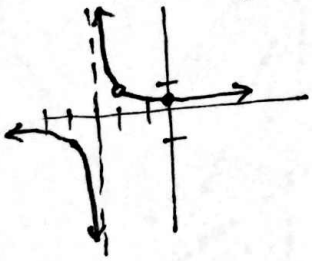
560

c. max profit = $1150

2. domain → where function exists

$f(x) = \frac{x+2}{(x+2)(x+3)}$ ← doesn't exist if $x = -2$ or -3

- D: $(-\infty, -3) \cup (-3, -2) \cup (-2, \infty)$
- hole @ $(-2, 1)$ because $x+2$ cancels. substitute in -2 to reduced function to find where part would be hole
- asymp: $x = -3$ (doesn't cancel)
- end behav: $y = 0$
- x-int: none
- y-int: $(0, 1/3)$



3. $\frac{4x(x-1)}{x+4(x-1)} + \frac{3(x+4)}{(x-1)(x+4)} = \frac{15}{(x-1)(x+4)}$

$4x^2 - 4x + 3x + 12 = 15$

$4x^2 - x - 3 = 0$

$(4x+3)(x-1) = 0$

$x = -3/4$ or ✕ extraneous

4. $\lim_{x\to\infty} f(x) = 0$ $\lim_{x\to -2^-} f(x) = -\infty$

$\lim_{x\to -\infty} f(x) = 0$ $\lim_{x\to -2^+} f(x) = \infty$

$\lim_{x\to -2} f(x)$ = Does Not Exist

#3 graph them! use the zero function and plug in. all add to 5 only one that adds to 8 is the first one → A

$.12829 + 4.871 = 5$

$\frac{1}{.12829} + \frac{1}{4.871} = 8$

#7 if you graph both equations for each c, the only one that approaches the same value from both sides of 2 is C. They both approach 3. We can also see this by substituting in. if we substitute in 2 for x in both equations, the only time they equal the same y is when $c = 1$.

#13 y-ints: set $x = 0$!

$0 + 8 = 2(y+3)^2$

$8 = 2(y+3)^2$

$4 = (y+3)^2$

$\pm 2 = y + 3$ $y = -1$ or -5

distance btw is 4 → A

#14 substitute in or find common denominator → B

#18 graph! → C

#20 substitute in! L x W x H

$(4x-6)(x-6)(3)$ → B

L W H