

Review Quiz

2301 Precal - Palmer
Thu 4-11-19 Pg 1

ex) $f(x) = \frac{5x+3}{2x-3}$ $f^{-1}(x) = ?$

$D: (-\infty, \frac{3}{2}) \cup (\frac{3}{2}, \infty)$

$R: (-\infty, \frac{5}{2}) \cup (\frac{5}{2}, \infty)$

$$y = \frac{5x+3}{2x-3}$$

$$x = \frac{5y+3}{2y-3}$$

$$(2y-3)(x) = 5y+3$$

$$2xy - 3x = 5y + 3$$

$$y = \frac{3+3x}{2x-5}$$

$$y(2x-5) = 3+3x$$

$$2xy - 5y = 3 + 3x$$

$$f^{-1}(x) = \frac{3+3x}{2x-5}$$

$D: (-\infty, \frac{3}{2}) \cup (\frac{5}{2}, \infty)$

$R: (-\infty, \frac{3}{2}) \cup (\frac{3}{2}, \infty)$

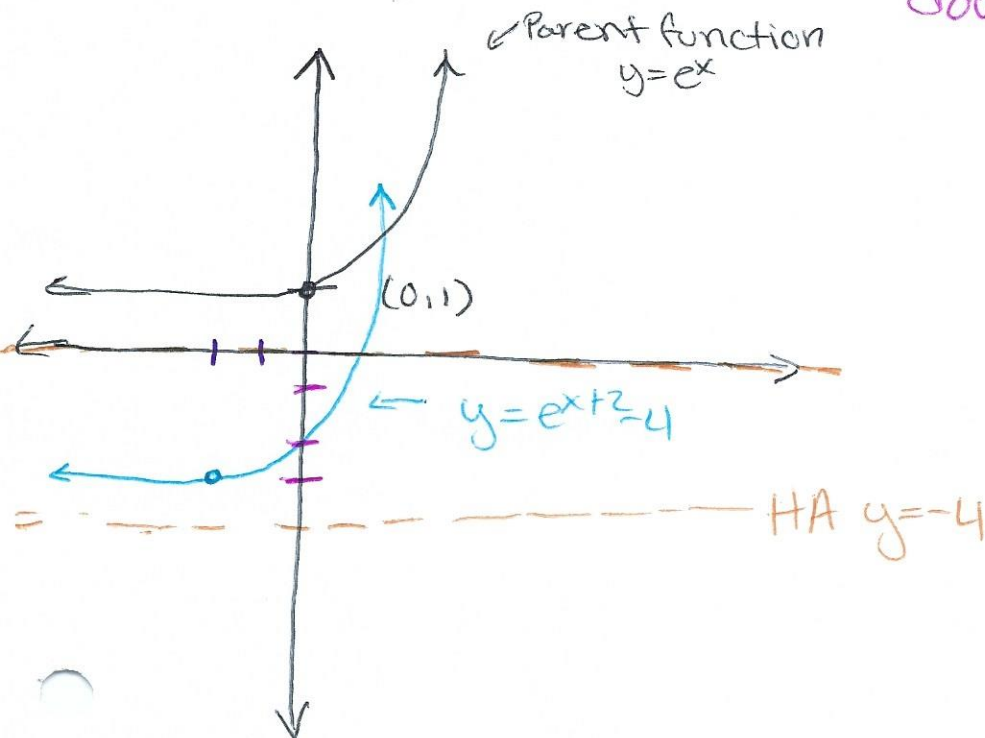
ex) Graph $f(x) = e^{x+2} - 4$

Vertical Transformation

left + 2

Horizontal Transformation

down 4



Half life / e^x

A pop. of rabbits increases @ a rate of

15% per year. If we start with 17 rabbits, how many will we have after 8 years?

$$((17)(1.15))^{1.15}$$

$$17(1.15)^8 \approx 52 \text{ rabbits}$$

A pop. of rabbits decrease @ a rate of 15% per year. If we start with 17 rabbits, how many will you have after 8 years?

$$((17)(.15)(.15)) \quad (17)(.15)^8 \approx 4.35 \times 10^{-6}$$

Natural exp function (e^x) for continuous.

Tree pop. that follows a continuous exp. decay model, 1,000 trees, pop is continuously decreasing at a rate of 3% per year. How many trees will be left in 20 years?

$$P e^{rt} \rightarrow (1000) e^{-.03(20)} \rightarrow (1000) e^{-0.6} \approx 549 \text{ trees}$$

$$P=1,000 \quad r=-.03 \quad t=20$$

negative because it's a decay