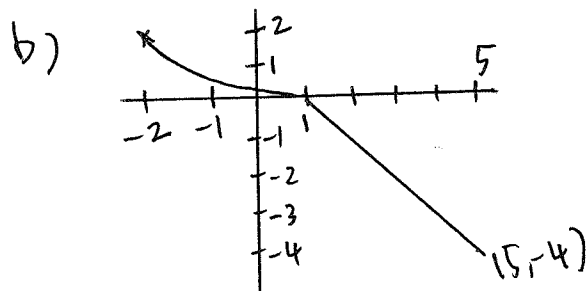


MATH 10A Midterm 1 Version B

$$1) a) \lim_{x \rightarrow \infty} \frac{1+2e^x}{5+7e^x} = \lim_{x \rightarrow \infty} \frac{\frac{1}{e^x} + 2}{\frac{5}{e^x} + 7} = \frac{2}{7}$$

$$b) \lim_{x \rightarrow -\infty} \frac{1+2e^x}{5+7e^x} = \frac{1}{5}$$

$$2) a) f^{-1}(4) = 6$$



$$c) [-2, 5]$$

$$d) [-4, 2]$$

$$3) a) 200 \cdot (3)^{t/4}$$

$$b) 200 \cdot (3)^{6/4} = 200 \cdot (3)^{3/2}$$

$$4) a) t = 12 \text{ sec.}$$

$$b) \frac{s(3) - s(1)}{3 - 1} = \frac{27 - 11}{2} = 8 \text{ ft/sec}$$

$$c) \lim_{h \rightarrow 0} \frac{s(1+h) - s(1)}{h} = \lim_{h \rightarrow 0} \frac{-(1+h)^2 + 12(1+h) - 11}{h}$$

$$= \lim_{h \rightarrow 0} (-h + 10) = 10 \text{ ft/sec}$$