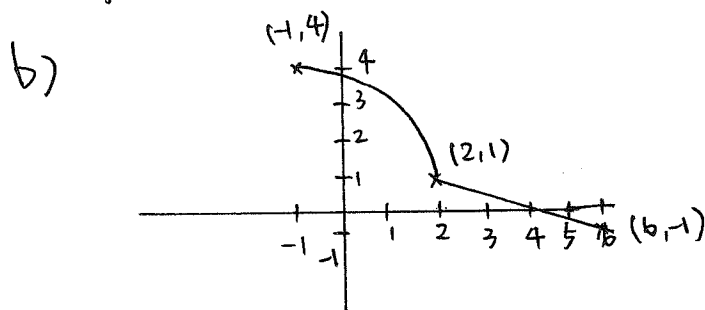


MATH 10A Midterm 1 Version A

$$1) a) \lim_{x \rightarrow \infty} \frac{2+e^x}{3+4e^x} = \lim_{x \rightarrow \infty} \frac{\frac{2}{e^x} + 1}{\frac{3}{e^x} + 4} = \frac{1}{4}$$

$$b) \lim_{x \rightarrow -\infty} \frac{2+e^x}{3+4e^x} = \frac{2}{3}$$

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



$$c) [-1, 6]$$

$$d) [-1, 4]$$

$$3) a) 150 \cdot (3)^{t/6}$$

$$b) 150 \cdot (3)^{9/6} = 150 \cdot (3)^{3/2}$$

$$4) a) t = 16 \text{ sec}$$

$$b) \frac{s(3) - s(1)}{3 - 1} = \frac{39 - 15}{2} = 12 \text{ feet/sec}$$

$$\begin{aligned} c) s'(1) &= \lim_{h \rightarrow 0} \frac{s(1+h) - s(1)}{h} = \lim_{h \rightarrow 0} \frac{-(1+h)^2 + 16(1+h) - 15}{h} \\ &= \lim_{h \rightarrow 0} \frac{-2h - h^2 + 16h}{h} = \lim_{h \rightarrow 0} (-h + 14) = 14 \end{aligned}$$