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Analytical methods
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exam 1

Question one

a)

$$y = 2 \sqrt{\frac{3}{x^3}}$$

$$\frac{dy}{dx} = \sqrt{3/x^2}$$

$$\frac{y^2}{4} = \frac{3}{x^2}$$

$$\frac{12}{y^2} = x^2$$

$$x = \sqrt{\frac{12}{y^2}} = \frac{\sqrt{12}}{y}$$

$$x = \frac{\sqrt{12}}{y}$$

b

i

$$\frac{2x+3}{4} = \frac{5x+1}{-3}$$

$$(-3)(2x+3) = (4)(5x+1)$$

$$-6x + -9 = 20x + 4$$

$$-9 - 4 = 20 + 6x$$

$$-13 = 26x$$

$$26x = -13$$

$$x = \frac{-13}{26}$$

$$x = \underline{\underline{-0.5}}$$