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Arturanas Vitkus
(1903792)

Pg 1
ACHA4000

Question One

[5]

a) $V_{\min} = \sqrt{\frac{\omega}{s} \times \frac{2}{r} \times \frac{1}{CL}}$

$$V_{\min}^2 = \frac{\omega}{s} \times \frac{2}{r} \times \frac{1}{CL}$$

$$\frac{V_{\min}^2 \times r \times CL}{2 \times 1} = \frac{\omega}{s} = \frac{V_{\min}^2 \times r \times CL}{2 \times 1 \times \omega} = 5$$

~~V_{min}~~ $5 = \frac{200^2 \times 0.41 \times 0.52}{2 \times 1 \times 490332}$

$$s = 8.70 \times 10^{-3} \text{ m}^2$$

b)i) $\frac{8x-3}{5} = \frac{-5x+6}{-3}$

$$-3(8x-3) = 5(-5x+6)$$

$$-24x+9 = -25x+30$$

~~$8x-3 = -5x+6$
 $8x+5x = 6-5+3+3$
 $13x = 6-5+3+3$
 $13x = 7$
 $x = \frac{7}{13}$~~