Ch. 15: Q# 3, 5 & P# 1, 3, 5

Q 3

wave speed is independent of wave amplitude $V_1 = V_2 = V_3$

P1

$$v_{string} = \sqrt{\frac{2T_s}{\mu}}$$

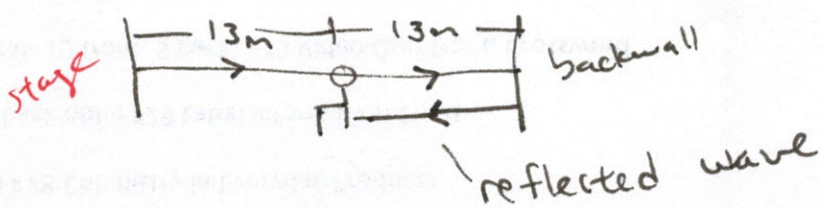
$$= \sqrt{2 v_{string}}$$

$$= \sqrt{2(200\,m/s)}$$

$$= 280\,m/s$$

P 3

speed of sound at 20°C is 343 m/s



$$\frac{13m}{343\,m/s} = 0.0379s$$

$$\frac{26m + 13m}{343\,m/s} = 0.114s$$

$$0.114s - 0.038s = 0.076s$$

P5

wave speed in H_2O – 1480 m/s

distance = 3200 km

$$\Delta t = \frac{\Delta x}{v_{water}}$$

$$\frac{3200\,km}{1480\,m/s} = 21625$$

or

36 min