

NAMES: AUBI FATIMAH  
 DEPT: BIOMEDICAL  
 MATERI: FISIKA DASAR  
 SAWANGSIKUN NARAHUMAS

1) For figure 12.5 (1)

$$v = 4t - 5t^2 \text{ m/s}$$

$$s = \int v dt$$

$$s = \int (4t - 5t^2) dt$$

$$= 2t^2 - 5t^3$$

$$\text{When } t = 4 \text{ s}$$

$$s = 2(4)^2 - (4)^3$$

$$= 32 - 64$$

$$s = -32 \text{ m}$$

2) For figure 12.4 (2)

$$v = (0.5t^3 - 8t) \text{ m/s}$$

$$a = dv/dt$$

$$dv/dt = 8(0.5)t^2 - 8$$

$$= 1.5t^2 - 8$$

$$a = dv/dt / t = 2$$

$$= 1.5(2)^2 - 8$$

$$= 6 - 8 = -2 \text{ m/s}^2$$

3) For figure 12.7 (3)

$$A = CAt^2 - 2) \text{ m/s}^2$$

$$v = \int A dt$$

$$v = \int CAt^2 - 2 dt$$

$$= 4t^3/3 - 2t + c$$

$$s = \int v dt$$

$$= \int 4t^3/3 - 2t + c dt$$

$$= 4t^4/12 - \frac{2t^2}{2} + ct$$

$$p = 1/3 t^4 - t^2 + ct + k$$

$$\text{When } t=0, p=2$$

$$-2 = 1/3(0)^4 - (0)^2 + c(0) + k$$

$$k = -2$$

$$\text{When } t=2, p=20, k=-2$$

$$-20 = 1/3(2)^4 - 2^2 + c(2) - 2$$

$$-20 = -0.1 + 2c$$

$$c = -9.7$$

$$p = 1/3 t^4 - t^2 - 9.7t - 2$$

$$\text{When } t=4$$

$$p = 1/3(4)^4 - 4^2 - 9.7(4) - 2$$

$$p = 25.7 \text{ m/s}$$

4) For figure 12.8 (4)

$$v = (20 - 0.55t) \text{ m/s}$$

$$dt = \frac{dv}{a} \text{ and } dt = \frac{dv}{a}$$

$$a = dv/dt, dv/dt = ds/dt$$

$$ds/dt$$

$$dv/ds = 0.15, \frac{ds}{dt} = (20 - 0.55t^2)$$

$$A = (20 - 0.15t) (20 - 0.55t^2)$$

$$\text{When } s=15$$

$$A = C - 0.1(15) (20 - 0.55(15)^2)$$

$$A = -13.125 \text{ m/s}^2$$