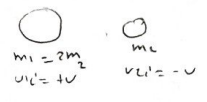


1

الزخم

1] الزخم قبل التصادم



2] $\Delta p = p_1 + p_2 = 2mv - mv = mv$

$m = 2 \text{ kg}$
 $v_1 = 2 \text{ m/s}$
 $a_{(1-2)}$

1] $F = ma$
 $a = \frac{F}{m} = \frac{100}{2} = 50 \text{ m/s}^2$
2] $\phi = ?$ $I = \Delta p$

3] $I = (2 \times 2 \times 100) + (200) + (2 \times 100)$
 $I = 300 \text{ N}\cdot\text{s}$
 $1 = m\Delta v$
 $150 = v_2 - 2$
 $v_2 = 152 \text{ m/s}$

$m = 1000 \text{ kg}$
 $v_1 = 15 \text{ m/s}$
 $v_2 = 5 \text{ m/s}$
 $t = 2 \text{ s}$

$F = \frac{\Delta p}{\Delta t} = \frac{m\Delta v}{\Delta t} = \frac{1000(5-15)}{2} = -1000 \text{ N}$

1] $F = \frac{\Delta p}{\Delta t} = \frac{40-30}{4-2} = \frac{10}{2} = 5 \text{ N}$

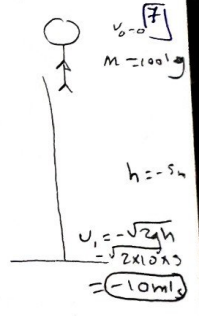
2] $I = \Delta p = p_2 - p_1 = 40 - 20 = 20 \text{ N}\cdot\text{s}$

3] $I = \Delta p = 30 - 20 = 10 \text{ N}\cdot\text{s}$

$I = m\Delta v$

التغير في السرعة

$F_{\text{net}} = \frac{\Delta p}{\Delta t} = \frac{m\Delta v}{\Delta t} = \frac{100(0-10)}{4} = \frac{1000}{0.4} = 2500 \text{ N}$



$F_{\text{net}} = F - mg$
 $2500 = F - 100(10)$
 $3500 = F$

$\frac{1}{2} = 0$
 $t = 0.4$

$F = \frac{\Delta p}{\Delta t} = \frac{m\Delta v}{\Delta t} = \frac{1200(25-10)}{230} = 600 \text{ N}$

8] $m = 1200 \text{ kg}$
 $v_1 = 10 \text{ m/s}$
 $v_2 = 25 \text{ m/s}$
 $t = 30 \text{ s}$

$F = \frac{\Delta p}{\Delta t} = \frac{m\Delta v}{\Delta t} = \frac{15(10-20)}{1.5} = -30 \text{ N}$

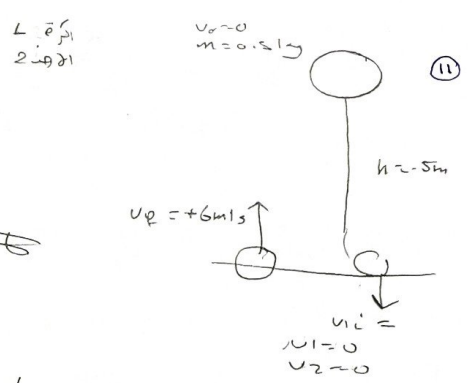
9] $m = 15 \text{ kg}$
 $v_1 = 20 \text{ m/s}$
 $v_2 = 10 \text{ m/s}$
 $t = 5 \text{ s}$

$P_1 = \sqrt{h}$
 $P_1 = 2P_2$ $1 \cdot v_1 = 4v_2$ $m_1 = m_2$ (10)

$v_1 = 2v_2$
 $P_1 = m_1 v_1 = m_2 2v_2$

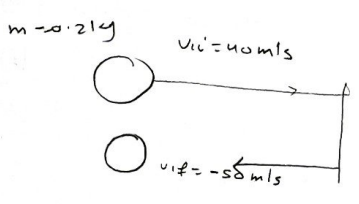
$P_1 = 2P_2$

$v_{1i} = -\sqrt{2gh}$
 $= -\sqrt{2 \times 10 \times 5}$
 $= -10 \text{ m/s}$

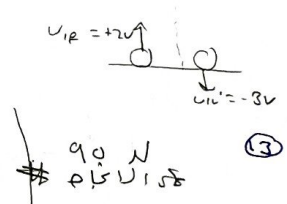


$I_{21} = \Delta P_1 = m_1 \Delta v_1 = 0.5(6 - (-10))$
 $= 8 \text{ N} \cdot \text{s}$

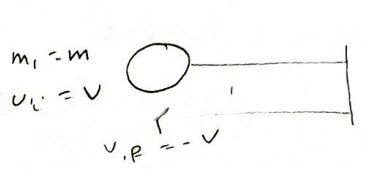
$F_{12} = \Delta P_1 = m \Delta v = m(2v - 3v)$
 $= 5m v$



$I = m \Delta v = 0.2(-50 - 40)$
 $= -18 \text{ N} \cdot \text{s}$
 $F = \frac{\Delta P}{\Delta t} = \frac{m \Delta v}{\Delta t} = 0.2 \frac{(-50 - 40)}{0.2}$
 $= -90 \text{ N}$



$F_{\text{net}} = 12 \text{ N}$
 $F = m a$
 $\frac{12}{3} = \frac{3 a}{3}$
 $a = 4 \text{ m/s}^2$



$\Delta P = m \Delta v$
 $m(-v - v)$
 $= -2mv$

1. لا يمكن الدفع أكبر يكثر من كمية الدفع ولا الزخم محفوظ
2. تزداد سرعة الطائرة عند اقترابها من الأرض قبل التوقف
3. بزيادة الزخم ← تزداد الدفع ← تزداد السرعة ← تزداد الدفع

#

3

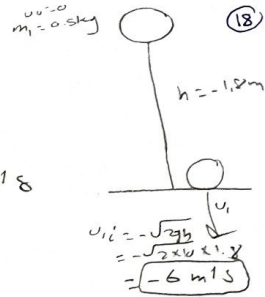
1) $\Delta p = m\Delta v = 2000(-2-5) = 14 \times 10^3 \text{ kg}\cdot\text{m/s}$

2) $F = \frac{\Delta p}{\Delta t} = \frac{14 \times 10^3}{0.5} = -28000 \text{ N}$

$m = 2 \times 1000$
 $= 2000 \text{ kg}$
 $v_i = 5 \text{ m/s}$
 $v_f = -2 \text{ m/s}$

$F = \frac{dp}{dt}$ $\frac{p}{F}$ $\Delta t = \frac{dp}{F}$ $\Delta p = p \sqrt{2-2\cos\theta}$
 $= mv \times 2$
 $= 2mv$

$p = mv$
 $= 0.5 \times 6$
 $= 3 \text{ kg}\cdot\text{m/s}$



$\Delta p = p \sqrt{2-2\cos\theta}$
 $= mv \times 2$
 $= 2mv$

$m_1 = m$
 $v_1 = v$
 $\theta = 180^\circ$

1) $I = \sum m_i v_i$
 $= (2 \times 12) + (1/2 \times 6 \times 12) = 60 \text{ N}\cdot\text{s}$

2) $I = m\Delta v$
 $60 = 7(v_2 - 2) \Rightarrow v_2 = 10.57 \text{ m/s}$

1) $I_{(0-2)} = (2 \times 12) = 24 \text{ N}\cdot\text{s}$
 2) $I = m\Delta v$
 $24 = 7(v_2 - 2) \Rightarrow v_2 = 5.4 \text{ m/s}$

$m = 7 \text{ kg}$
 $v_i = 2 \text{ m/s}$

$\Delta p = p_1 + p_2 = -mv + mv = 0$

المomentum لا يتغير في التصادمات المرنة، لكنه يتغير في التصادمات غير المرنة.

$1 \text{ kg}\cdot\text{m/s} = \text{N}\cdot\text{s}$

$\frac{p_a}{p_b} = \frac{\sqrt{2m_a v_a}}{\sqrt{2m_b v_b}} = \frac{\sqrt{4}}{\sqrt{1}} = 2$

$p_a : p_b ?$

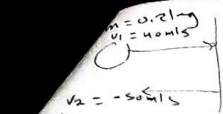
$v_a = v_b$ $m_a = 4m_b$

$\frac{p_a}{p_b} = \frac{2}{1}$ $p_a : p_b = 2 : 1$

$K = \frac{1}{2} m v^2 \times \frac{m}{m}$

$K = \frac{1}{2} m^2 v^2$

$K = \frac{p^2}{2m}$



$$I = m\Delta v = 0.2(-50 - 40) = -18 \text{ N}\cdot\text{s}$$

(28)

29) الفضا / تصادم غير مرن حيث ان سرعة المركبة 20 م/ثا اثناء التصادم وبقية ملاحظتها

موسم في الصيف / العتمة انما هي التي اذا لم تكن بالسرعة النسبة الزمنية التي تكون له فيه مستقرة اقسمة نسبة المركبة من التصادم

$$I = m\Delta v \quad \text{والتغير في سرعة}$$

(30)

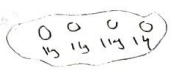
$$F = ma \Rightarrow F = m \frac{\Delta v}{\Delta t}$$

$$I = \Delta p \quad \leftarrow F = ma \quad (31)$$

$$F \cdot \Delta t = m\Delta v \quad I = \Delta p$$

(32)

$$F = 8 \text{ N}$$



$$F = ma \quad 8 = (4 \times 1) a$$

$$a = 2 \text{ m/s}^2$$

$$p_x = \sqrt{2} p_y \quad m_a = m_b \quad (33)$$

$$k_1 = 2 \text{ kg} \quad \frac{1}{2} m v^2 = 2 \times \frac{1}{2} m v^2 \quad v_x = \sqrt{2} v_y$$

$$p_x = m_x v_x \quad p_x = \sqrt{2} p_y$$

(34)

$$k_2 = 2 \text{ kg} \quad \frac{1}{2} m v_2^2 = 2 \times \frac{1}{2} m v_1^2 \quad v_2 = \sqrt{2} v_1$$

$$k_2 = 2 \text{ kg} \quad p_2 = m_2 v_2 = m_1 \sqrt{2} v_1 = \sqrt{2} p_1$$

35) زيادة الزخم (انزوا الكمية والكمون زخمه) اقل شيئا من سطح طلب - مثل القوة - فتصل الزخم الى

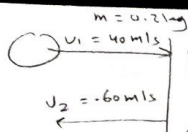
$$\downarrow F = \frac{\Delta p}{\Delta t} \uparrow$$

$$I = m\Delta v = 4(12) = 48 \text{ N}\cdot\text{s} \quad m = 4 \text{ kg} \quad \Delta v = 12 \text{ m/s} \quad (36)$$

$$\Delta p = m v \sqrt{2 - 2 \cos(360)} = 0$$

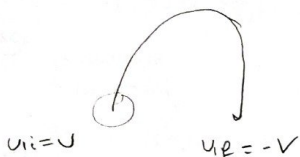
$$\theta = 36^\circ \quad \text{دو كمان} \quad (37) \quad (38)$$

5



1 $I = m \Delta v$
 $0.2(-60 - 40) = -20 \text{ N}\cdot\text{s}$
 $= -20 \text{ N}\cdot\text{s}$

2 $F = \frac{\Delta p}{\Delta t} = \frac{-20}{0.1} = -200 \text{ N}$



1 = Δp
 $F \cdot t = m \Delta v$
 $-m g \cdot t = m(-v - u)$
 $g \cdot t = \frac{2v}{g}$

40

الغلام الجلسه داخله + جربه ماله جسم اي نوعه مغناطيس رسيه كمانه ناهي يكون صدمه في تاثير اي قوى خارجيه

$m = 21 \text{ kg}$
 $u_1 = 0$
 $t = 6 \text{ s}$

42

$u_2 = ?$

1 = Δp
 $= (\frac{1}{2} \times 2 \times 5) + (4 \times 5) = 25 \text{ N}\cdot\text{s}$

1 $-m \Delta v$
 $\frac{25}{2} = \frac{2(u_2 - 0)}{2}$
 $V = 12.5 \text{ m/s}$

43

$p_1 = +p$
 $p_2 = -4p$

1 = $\Delta p = p_2 - p_1$
 $-4p - p = -5p$

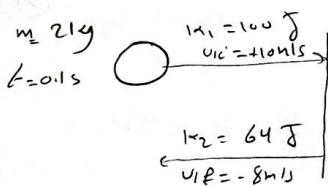
= $5p$
 اتجاه السيفال

44

$\Delta F = \frac{\Delta p}{\Delta t}$

عند تصادم الكرت مع بريد الارض نقل القوه من بيد الارض الى السيف

45



$\Delta p = 36 \text{ J}$

$K_1 = \frac{1}{2} m v_1^2$
 $100 = \frac{1}{2} \times 21 \times v_1^2$
 $v_1 = 10 \text{ m/s}$
 $K_2 = \frac{1}{2} m v_2^2$
 $64 = \frac{1}{2} \times 21 \times v_2^2$
 $v_2 = -8 \text{ m/s}$ (اربعه)

$F = \frac{\Delta p}{\Delta t} = \frac{m \Delta v}{\Delta t}$
 $F = \frac{21(-8 - 100)}{0.1}$
 $= -360 \text{ N}$

46

1 = $m \Delta v$
 $= 5(4 - 0)$
 $= 20 \text{ N}\cdot\text{s}$

$m = 5 \text{ kg}$
 $v_2 = 4 \text{ m/s}$

$u_1 = 0$

47

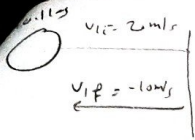
التغير في كنهه حركته

48

لان زخم الانفاس بالصل اعزل سبب موازنه الانفاس مع الارض

$\Delta F = \frac{\Delta p}{\Delta t}$

تبرائة الزخم ← نقل القوه ← فيل الارض



$$I = m \Delta v = 0.1(-10 - 2) = -3 \text{ N}\cdot\text{s}$$

49

• * (انزاحة للسرعة) : P) \leftarrow V ايجابية \leftarrow P ايجابية

$$I = m \Delta v = 1200(10 - 0) = 12000 \text{ N}\cdot\text{s}$$

$$m = 1200 \text{ kg} \\ v = 10 \text{ m/s}$$

50

51

52

53

\leftarrow P \leftarrow ايجابية \leftarrow ايجابية \leftarrow ايجابية

$$I = m \Delta v = 2 \times 12 = 24 \text{ N}\cdot\text{s}$$

$$m = 2 \text{ kg} \\ \Delta v = 12 \text{ m/s}$$

54

55

Px = ?

$$k_y = 8 k_x \Rightarrow m_y = \frac{1}{2} m_x$$

$$k_y = 8 k_x \\ \frac{1}{2} m_y v_y^2 = 8 \times \frac{1}{2} m_x v_x^2 \\ m_y v_y^2 = 8 m_x v_x^2 \\ v_y = 2 v_x \\ v_x = \frac{1}{2} v_y$$

$$P_x = m_x v_x \\ = \frac{1}{2} m_y \times \frac{1}{2} v_y \\ P_x = \frac{1}{4} P_y$$

$$F = \frac{\Delta p}{\Delta t} = \frac{m \Delta v}{\Delta t} \\ 1050 = \frac{900(55 - v)}{30} \\ 35 = 55 - v \\ v = 20 \text{ m/s}$$

$$m = 900 \text{ kg} \\ v_1 = v \\ F = 1050 \text{ N} \\ t = 30 \text{ s} \\ v_2 = 55 \text{ m/s}$$

$$m = m$$

$$k_2 = 4 k_1 \\ \frac{1}{2} m_1 v_1^2 = 4 \times \frac{1}{2} m_2 v_2^2 \\ \boxed{v_2 = 2 v_1} \quad \boxed{v_1 = \frac{1}{2} v_2} \\ p_2 = m_2 v_2 = m_1 2 v_1$$

$$p_2 = 2 p_1 \\ = 2 \times 16 \\ = 32 \text{ kg}\cdot\text{m/s}$$

$$p_1 = 16 \text{ kg}\cdot\text{m/s} \\ p_2 = ?$$

$$k_2 = 4 k_1$$

$$t = 10 \text{ s} \quad v = 6 \text{ m/s}$$

$$t = 4 \text{ s} \quad \text{سرعة اولى}$$

$$I = \text{السرعة المتغيرة} \\ = (4 \times 10) = 40$$

$$F_{\text{توسط}} = 10 \text{ نيوتن}$$

$$I = m \Delta v \\ 40 = 5 v_2$$

$$v_2 = 8 \text{ m/s} \\ \text{السرعة التي اصطوبت} \\ \text{السرعة اولى}$$

$$F = 10 \text{ N}$$

$$F = \frac{\Delta p}{\Delta t} = \frac{m \Delta v}{\Delta t}$$

$$10 = \frac{5 \times 6}{t}$$

$$10 t = \frac{30}{10}$$

$$t = 3 \text{ s}$$

$$m = 5 \text{ kg}$$

$$v = 6 \text{ m/s}$$

$$t = ?$$

56

57

58

59

60

تلك كتلة الدفع أكبر بكثير مما عليه الفضة ولا زالت صافية
في تلك السرعة ارتداد صغيرة

(7)

$$F = \frac{\Delta p}{\Delta t} = \frac{m \Delta v}{\Delta t}$$

نقل الزخم من تزداد السرعة من تزداد السرعة تكون القوى

(61) $m_1 = 0.5 m_2$

$v_1 = v_2$

$p_1 = ?$

$|v_1| = |v_2|$

$\frac{1}{2} m_1 v_1^2 = \frac{1}{2} m_2 v_2^2$

$\frac{1}{2} m_1 v_1^2 = \frac{1}{2} m_2 v_2^2$

$\frac{1}{2} v_1 = \frac{1}{2} v_2$

$v_1 = \frac{v_2}{\sqrt{1/2}}$

$p_1 = m_1 v_1$

$= \frac{1}{2} m_2 \times \frac{v_2}{\sqrt{1/2}}$

$= \frac{1}{\sqrt{2}} m_2 v_2$

$p_1 = \frac{1}{\sqrt{2}} p_2$

$\frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$

(63) $\frac{1}{\sqrt{2}}$

(64)

$m = 0.31 \text{ kg}$



$v_1 = 30 \text{ m/s}$

$v_2 = -20 \text{ m/s}$

$t = 0.1 \text{ s}$

$F = \frac{\Delta p}{\Delta t} = \frac{m \Delta v}{\Delta t} = \frac{0.3(-20 - 30)}{0.1} = -150 \text{ N}$

(65) القوة

(3)

$v_2 = 4v_1$

$\frac{1}{2} m_1 v_1^2 = \frac{1}{2} m_2 v_2^2$
 $v_2 = 2v_1$

$p_2 = m_2 v_2$

$m_1 \times 2v_1$

$p_2 = 2p_1$

$= 2 \times 16 = 32 \text{ kg} \cdot \text{m/s}$

(66) $p_1 = 16$

$v_2 = 4v_1$

$p_2 = ?$

(4)

(4)

$m = 2 \text{ kg}$
 $v_1 = 6 \text{ m/s}$



$p_1 = 12 \text{ N.s}$

$1 = m \Delta v$

$16 = 2 \Delta v$

$\Delta v = 8 \text{ m/s}$

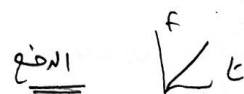
تجاه الزمن من قبل الذراع على السهم فلذا تذكر

(زوايا الانعكاس بالبرص من زوايا الاصطدام بالزاوية الصلبة)

(68)

(71) انقاص الزخم / ثابت الزخم بين صديقه ما الا ان

ديكون بعيدا عن تأثير اي قوى خارجية



$p = m_1 v_1 + m_2 v_2$

$= 2m v$

(69)

(70)

(72) زيادة الزخم من تزداد السرعة من تزداد الدفع

$\uparrow v = \uparrow \Delta v$ \leftarrow قتل صدى الية

$$1) F = \frac{dp}{dt} = \frac{m\Delta v}{\Delta t} = \frac{2(5-0)}{10} = 1 \text{ N} \quad m = 2 \text{ kg} \quad (73)$$

$$2) I = m\Delta v = 2(15-0) = 30 \text{ N}\cdot\text{s}$$

$$F = \frac{dp}{dt} = \frac{m\Delta v}{\Delta t} = \frac{40}{4} = 10 \text{ N}$$

$$F = \frac{dp}{dt} = \frac{m\Delta v}{\Delta t} = \frac{80}{5} = 16 \text{ N}$$

$$dp = mv\sqrt{7-20} \text{ @}$$

$$= 2 \text{ mV}$$

(74) $F = 2 \text{ N}$
 $m = 1 \text{ kg}$
 $v_1 = 2 \text{ m/s}$
 $t = 4 \text{ s}$
 $I = 40 \text{ N}\cdot\text{s}$

(75) $F = 2 \text{ N}$
 $m = 5 \text{ kg}$
 $t = 4 \text{ s}$
 $\Delta v = ?$

(76) $\theta = 180^\circ$

$$I_1 = I_2$$

$$F_1 t_1 = F_2 t_2$$

$$3F_1 t_1 = F_2 t_2$$

$$3t_1 = t_2$$

$$t_1 = \frac{1}{3} t_2$$

(77)

$$F_1 = 3F_2$$

$$I_1 = I_2$$

$$t_1 = ?$$

$$\frac{p}{v}$$

$$\frac{p}{v} = \frac{2v}{v^2}$$



$$p_y = \frac{1}{4} p_x$$

$$(\sqrt{m_y k_y} = \frac{1}{4} \sqrt{2m_x k_x})^2$$

$$\frac{1}{4} m_y k_y = \frac{1}{16} m_x k_x$$

$$k_y = \frac{1}{4} k_x$$

$$m_y = \frac{1}{4} m_x$$

$$p_y = \frac{1}{4} p_x$$

$$k_y = ?$$

(78) $m_1 = 3 \text{ kg}$
 $v_1 = 5 \text{ m/s}$
 $v_2 = ?$

$$I = \sum m_i v_i$$

$$= \left(\frac{1}{2} \times 3 \times \frac{10}{2}\right) + (3 \times 20) + (6 \times 20)$$

$$= 30 + 60 + 120 = 210 \text{ N}\cdot\text{s}$$

$$I = m\Delta v$$

$$210 = 3(v_2 - 5)$$

$$70 = v_2 - 5$$

$$v_2 = 75 \text{ m/s}$$

$$F = \frac{dp}{dt} = \frac{m\Delta v}{\Delta t}$$

$$F = \frac{3(75-5)}{9} = 23.3 \text{ N}$$

9

$$k_a = (2)^2 k_b$$

$$\boxed{k_a = 4k_b} \quad \#$$

$$m_a = m_b$$

$$P_a = 2P_b$$

$$k_a = ?$$

83 نظرية الدفع-الزخم: الزخم الذي ضربه القوة هو السحب خلال فترة زمنية ما يساوي التغير في الزخم
السحب خلال تلك الفترة.

$$P_a : P_b$$

$$\frac{P_a}{P_b} = \frac{\sqrt{2m_a k_a}}{\sqrt{2m_b k_b}} = \frac{\sqrt{4 \times 4 \times k_a}}{\sqrt{4 \times k_b}} = \frac{2}{1}$$

$$\frac{P_a}{P_b} = \frac{2}{1} \quad \boxed{P_a : P_b = 2 : 1}$$

84 $m_a = 4m_b$

$$k_a = k_b$$

85 نفث منزل

$$\Delta P = 0$$

86 $m = 2 \text{ kg}$
 $u = 3 \text{ m/s}$

$$I = \frac{1}{2} m u^2 + (2 \times 20) + (\frac{1}{2} \times 2 \times 20) = 50 \text{ N}\cdot\text{s}$$

87 • لانه يربطه اركانها

88

$$\frac{P_2}{P_1} = \frac{\sqrt{2m_2 k_2}}{\sqrt{2m_1 k_1}} = \frac{\sqrt{k_2}}{\sqrt{9k_1}} = \frac{\sqrt{1}}{\sqrt{9}} = \frac{1}{3}$$

$m_1 = m_2$

$$k_1 = 9k_2$$

$$P_2 = P_1$$

$$1 : 3$$

89 $m = 4 \text{ kg}$
 $v_1 = 2 \text{ m/s}$
 $t = 8 \text{ s}$
 $v_2 = 20 \text{ m/s}$

$$I = I = (\frac{1}{2} \times (F+10) \times 2 \times 4) + (\frac{1}{2} \times 4 \times F) = 72$$

$$72 = 2F + 20 + 2F$$

$$72 = 4F + 20$$

$$\frac{4F}{4} = \frac{52}{4}$$

$$F = 13 \text{ N}$$

90 $I = \Delta P$

$$= m \Delta v$$

$$4(20-2)$$

$$4 \times 18$$

$$= 72$$

91

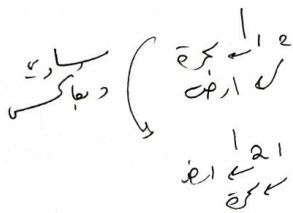
8 is σ \rightarrow ΔT (90)

$$\frac{|k|}{P} = \left(\frac{\frac{1}{2} m v^2}{\sqrt{2 m l k}} \right)^2 = \frac{(\frac{1}{2})^2 m^2 v^4}{2 m l k} = \frac{\frac{1}{2} v^2}{2}$$

$$m_1 = m_2 \quad (91)$$

$$v_1 = v_2$$

$$\left(\frac{k}{P} \right)^2 = \frac{v^2}{4} \quad \frac{k}{P} = \frac{v}{2} \quad \#$$

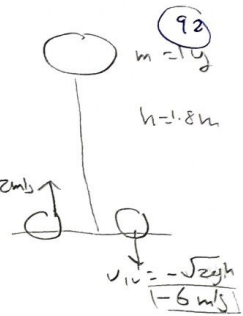


دفع الكرة الى اليمين \rightarrow

$l_1 = 2$ $l_2 = 8$ $\#$

$$= m_1 \Delta v = 1(2-0) = 2 \text{ kg}$$

$v_{ip} = 2 \text{ m/s}$



(93)

(94)

$$F_{12} = 100 \text{ N}$$

$$\Delta P = 5$$

$$F = \frac{\Delta P}{\Delta t}$$

$$100 = \frac{5}{\Delta t}$$

$$100 \Delta t = 5$$

$$\Delta t = 0.05 \text{ s} \quad \#$$

$$P_x = \sqrt{9} k_y$$

$$l_x = 9 l_y$$

$$m_a = m_b \quad (95)$$

$$P_x = 3 P_y \quad \#$$

$$m_a = m_b \quad (96)$$

$$k_a = (3)^2 k_b$$

$$P_a = 3 P_b$$

$$k_a = 9 k_b \quad \#$$

11) $\Delta I = m\Delta v = 2(8-0) = 16 \text{ N}\cdot\text{s}$ #

2) $F = \frac{\Delta p}{\Delta t} = 8 \text{ N}$ #

$\Delta p = I = m\Delta v = 2\left(\frac{0-0}{4}\right) = 0 \text{ N}\cdot\text{s}$

3) $F = \frac{\Delta p}{\Delta t} = \frac{8}{2} = 4 \text{ N}$ #

$\Delta p = I = m\Delta v = 2(8-4) = 8 \text{ N}\cdot\text{s}$

1) $\Delta I = \Delta p = m\Delta v = 0.5(20-0) = 10 \text{ N}\cdot\text{s}$ #

2) $F = \frac{\Delta p}{\Delta t} = \frac{m\Delta v}{\Delta t} = \frac{10}{0.02} = 500 \text{ N}$ #

$m = 2 \text{ kg}$
 $I_{(0-2)}$

$v_i = 0$
 $m = 0.5 \text{ kg}$
 $v_i = 20 \text{ m/s}$
 $t = 0.02 \text{ s}$

18)

$v_1 = -10 \text{ m/s}$

$v_2 = 7$

$k_2 = \frac{64}{100} k_1 \Rightarrow \frac{64}{100} \times 2.5$

$v_2 \Rightarrow 1.6 = \frac{1}{2} \times 50 \times 10^{-3} \times v_2$

$v = +8 \text{ m/s}$ #

$m = 50 \times 10^{-3} \text{ kg}$

$v = -10 \text{ m/s}$

$k_1 = \frac{1}{2} m v_1^2$

$= \frac{1}{2} \times 50 \times 10^{-3} \times 100$

$k_1 = 2.5 \text{ J}$

$k_2 = 1.6 \text{ J}$

1) $I = m\Delta v = 5 \times 10^{-3} (8 - 10) = 0.01 \text{ N}\cdot\text{s}$

2) $F_{21} = \frac{\Delta p}{\Delta t} = \frac{m\Delta v}{\Delta t} = \frac{50 \times 10^{-3} (8 - 10)}{0.01} = 30 \text{ N}$

3)

القوة غير مرنة (م) الطاقة الحركية غير محفوظة

کونکے انگریزی 2 سے 12 سے 204 [7]

$$e_{p1} = \sum y$$

$$0 = p_1 + p_2$$

$$-p_1 = p_2$$

$$(-\sqrt{m_1} k_1 = \sqrt{m_2} k_2)^2$$

$$m_1 k_1 = m_2 k_2$$

$$m_1 k_1 = m_2 k_2$$

$$m_1 (k - k_2) = m_2 k_2$$

$$m_1 k - m_1 k_2 = m_2 k_2$$

$$m_1 k = m_2 k_2 + m_1 k_2$$

$$m_1 k = k_2 (m_2 + m_1)$$

$$k_2 = \frac{k m_1}{m_1 + m_2}$$

$$k_2 = k \left(\frac{m_1}{m_1 + m_2} \right)$$

دیکھو

$$K = k_1 + k_2$$

$$k_1 = k - k_2$$

#