E046 Online Test

Ref66

The car is driven along a straight road for 8.4 Km at 70 Km/ hr. At which point the truck runs off the gasoline & stops. The next 30 minutes, the driver walks along the road for another 3 Km.

(a) What is over all displacement?

(b)What is time interval from the beginning of the drive to arrival at the station?

(c)What is average velocity?

A	20 km, 1 HR, 20 km/hr	B	30 km, 2 HR, 30 km /hr
C	10.4 km, 0.62 HR, 16.8 km/hr	D	50 km, 5 HR, 70 km/hr
	Answer		

Ref70

On a hot day in Las Vegas, an oil tanker loaded 37000 L of diesel fuel. It encounters cold weather on Utah where temperature was 23 Degree K lower than in Las Vegas. How many litres did it deliver?

Volume expansion for diesel fuel is 9.5×10^{-4} / Deg C coefficient of linear expansion is 11×10^{-6} /deg c

A	18380 L	B	36190 L
C	20000 L	D	10000 L
	Answer		

Ref73

A cylinder contains 12 L of oxygen at 20 deg C and 15 atm. The temperature is raised to 35 deg C and the volume is reduced to 8.5L . What is the final pressure of the gas in atmosphere.?

A	22 atm	B	33 atm
C	11 atm	D	44 atm
	Answer		

Ref76

Three Carnot engines operate between reservoir temperatures of (a) 400 deg K and 500 deg K (b) 600 and 800 deg K (c) 400 and 600 deg K. rank the engineers according to thermal efficiencies. Greatest first.

A	c, b, a	B	a, b, c
C	b, c, a	D	Equal
	Answer		

Ref79

At t= 0, the displacement X(0) of the block is – 8.5 cm. The block's velocity V(0) is -0.92 m/ s and it's acceleration a (0) is 47 $m/s^{2.}$

(a) What is the angular velocity w of this system?

(b) What are the phase constant ϕ and amplitude Xm ?

A	22.5 rad/ s, 155 deg, 9.4 cm	B	50 rad/ s, 30 deg, 18 cm
C	100 rad/ s, 45 deg, 10 m	D	15 rad/ s, 75 deg, 4cm
	Answer		

Ref82

The following equations give the position X (t) of a particle in four situations
(a) X = 8t-4 (b) x= $-6t^3+9t^2+6$ (c) X = $3 / t^2 - 9/ t$ (d) X = $7 t^2 -4$ To which of these situations? Do the constant acceleration formulae apply?

A	a	B	b
C	c	D	d
	Answer		

Ref85

a = 3 I – 8 j b = -2 I + 4 j c = - 4 j

Find the resultant vector for a+b+c

A	10i+2j	B	7i+5j
C	2.5i – 2.3 j	D	0
	Answer		

Ref88

2 kg Tin is accelerated at 3m /s^2 in the direction shown by a over a frictionless horizontal surface. The acceleration is caused by three forces . What is the third force?

A	20N	B	10N
C	1N	D	12.5N
	Answer		

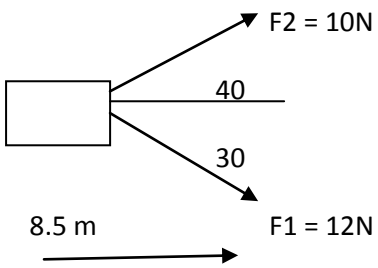
Ref91

Suppose that the coefficient of static friction μ between the rider's clothing and the canvas is 0.4 and the cylinder radius " R" is 2.1 m.

(a) What minimum speed (V) must the cylinder and the rider have if the rider is not to fall when the floor drops? (b) If the rider's mass is 49 Kg, what is the magnitude of centrifugal force on rider?

A	7.2 m/s, 1200N	B	3.6 m/s, 600N
C	21 m/s, 2000N	D	30 m/s, 3000N
	Answer		

Ref94

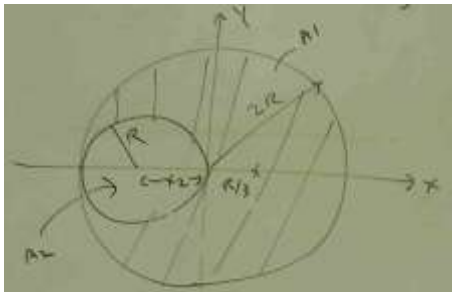


Find total work done of the forces.

A	306J	B	153J
C	469J	D	73J
	Answer		

Ref97

The figure shows a uniform metal plate " P " of radius " 2 R " from which a disk of radius "R" has been stamped out. Using the X-Y co-ordinate system shown, locate the centre of mass of the plate.



A	Xt = R / 4, Yt = R	B	Xt = R, Yt = R
C	Xt = R / 2, Y t = R/ 2	D	Xt = R / 3, Y t= 0
	Answer		

Ref100

A coach roach rides the rim of a rotating merry go around. If the angular speed is constant, does the coach roach have (a) Radial acceleration ? (b) Tangential acceleration ? What angle Θ_p should the arc subtend so that a 15. 4 kg at the point "P".

A	50 Deg	B	30 Deg
C	111 Deg	D	200 Deg
	Answer		

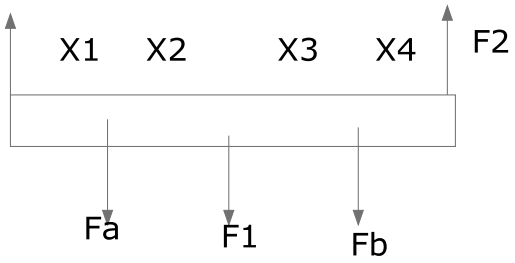
Ref67

A rolling object has linear velocity 342.5 m/s radius =3 m mass =170 kg Calculate total kinetic energy.

A	1.5 x 10^7 J	B	3 x 10^7 J
C	4.5 x 10^7 J	D	6 x 10^7 J
	Answer		

Ref68

The figure gives over view at a uniform rod in static equilibrium , the magnitude of the forces F1 & F2 are



X1= 4m, X2= 2m, X3=1m, X4 = 1m, Fa = 10 N ,Fb = 30N

A	90 N, 130 N	B	22.5 N, 32.5 N
C	45 N, 65 N	D	100 N, 200 N
	Answer		

Ref 69

A living room has the floor dimension and height of 3.5 m x 4.2 m. A height of 2.4 m (a) What does the air in the room weigh when the air pressure is 1 atm? (b) What is the magnitude of the atmosphere downward force on the top of your head which we take to have an area of 0.04m^2

A	420 N, 4 x 10^3 N	B	840 N, 8 x 10^3 N
C	210 N, 2 x 10^3 N	D	1640 N, 6 x 10^3 N
	Answer		