Task

(2) Distance = 200 km

$= 200 \times 10^3$ m

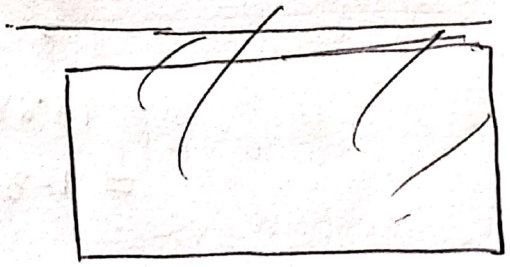
$= 2,00,000$ m

(3) 660 km = ? m

1 km = 10^3 m.

$\Rightarrow$ 660 km = 660×10^3 m

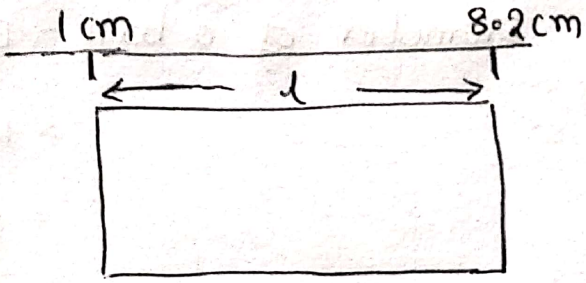
(4)



$24x = 11.5$

$x = 48$ mm $= \frac{48 \times 10^{-1}}{24}$ cm $= 2$ mm

(11)



According to Given data

length = 8.2 − 1

= 7.2 cm

(6)

Given that

Thickness of dozen coins = 40 cm

For 12 coins Thickness = 40 cm.

For 1 coin Thickness $= \frac{40}{12}$

$= 3.33$ cm

(7)

Given that

Thickness of 50 turns of wire = 64 cm

$\therefore$ Thickness of 1 wire $= \frac{64}{50}$ cm

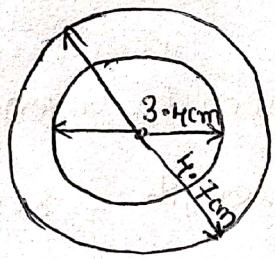
$= \frac{6.4}{5}$ cm

$= 1.28$ cm

$\simeq 1.3$ cm.

(8)

According to given data.



$\therefore$ Diameter of a ball $= D_2 - D_1$

$= 4.7 - 3.4$

$= 1.3$ cm

(9)

Thickness of each coin is $x = 4$ mm

$x = 0.4$ cm

Total thickness of 'n' coins is $= 6.8$ cm

$\therefore \quad nx = 6.8$

$\Rightarrow \quad n(0.4) = 6.8$

$\Rightarrow \quad n = \frac{6.8}{0.4} = \frac{68}{4}$

$\Rightarrow \quad n = 17.$

(10)

No. of coins $n = 24.$

Total thickness of 'n' coins $= 4.8$ cm.

$\Rightarrow \quad nx = 4.8$ cm

where 'x' is the thickness of each coin

$\Rightarrow \quad x = \frac{4.8}{n}$ cm

$= \frac{4.8}{24}$ cm

$= \frac{48^{2} \times 10^{-1}}{24}$ cm

$= 2 \times 10^{-1}$ cm

$= 2$ mm

(17)

length of the school $l = 20\ m$

Breadth of the school $b = 12\ m$.

we know that $1\ km = 10^3\ m$; $1\ mm = 10^{-3}\ m$

$\Rightarrow 1\ m = 10^{-3}\ m$ $\Rightarrow 1\ m = 10^3\ mm$

$\therefore$ length $l = 20\ m$

$= 20 \times 10^{-3}\ km$

$= 0.02\ km$

breadth $= 12\ m$

$= 12 \times 10^3\ mm$

$= 12000\ mm$.

(18)

we know that $1\ Par\ sec = 3.26\ LY$

$\therefore$ $100\ Par\ sec = 3.26 \times 100$

$= 326\ LY$.

we know that $1\ AU = 1.496 \times 10^{11}\ m$

$= 1.496 \times 10^8 \times 10^3\ m$

$= 1.496 \times 10^8\ km$

(19)

Given Velocity $= 5\ m/s$.

we know that $1\ m/s = 100\ cm/s$

$\therefore$ Velocity $= 5 \times 100\ cm/s = 500\ cm/s$

(20)

we know that $1\ km = 10^3\ m$ (or)

$= 10^5\ cm.$

Given distance $= 2.3\ km.$

$\Rightarrow 2.3 \times 10^3\ m$

$\Rightarrow 2300\ m$ (or)

$= 2.3 \times 10^5\ cm$

$= 23000\ cm.$

LTask Jee Main level

(11)

we know that $1\ mm = 10^{-3}\ m$

$1\ km = 10^3\ m \Rightarrow m = 10^{-3}\ km$

$\therefore 1\ mm = 10^{-3} \times 10^{-3}\ km$

$= 10^{-6}\ km$

(17)

we know that

$1\ Pico\ meter = 10^{-12}\ m$

$1\ micro\ meter = 10^{-6}\ m.$

$\therefore \dfrac{1\ Pico\ meter}{1\ micro\ meter} = \dfrac{10^{-12}\ m}{10^{-6}\ m} = 10^{-12} \times 10^6$

$= 10^{-12+6}$

$= 10^{-6}$

(18) we know that

1 nanometer $= 10^{-9}$ m

1 millimeter $= 10^{-3}$ m

$\therefore$ 1 nanometer $= 10^{-9}$ m

$= 10^{-6} \times 10^{-3}$ m

1 nanometer $= 10^{-6}$ mm

Given 1 nanometer $= 10^{x}$ mm

By comparing above two we get $x = -6$

Advanced level

(3) we know that $1 \text{ m/sec}^2 = 100 \text{ cm/sec}^2$

$\therefore$ $20 \text{ m/sec}^2 = 20 \times 100 \text{ cm/sec}^2$

$= 2000 \text{ cm/sec}^2$

and $1 \text{ m/sec}^2 = \frac{1}{\frac{1}{(60)^2}} \text{ m/min}^2$

$= 3600 \text{ m/min}^2$

$\therefore$ $20 \text{ m/sec}^2 = 20 \times 3600 \text{ m/min}^2$

$= 72000 \text{ m/min}^2$

(4)

No. of coins $n_1 = 5$; $n_2 = 7$

Thickness $x_1 = 1\,mm$; $x_2 = 0.5\,mm$

∴ when 7 coins are placed over 5 coins

Then the total thickness $= x_1 + x_2$

$= 1 + 0.5$

$= 1.5\,mm$

$= 0.15\,cm.$

(10)

Given length $l = 7\,m$

breadth $b = 5\,m.$

we know that $1\,mm = 10^{-3}\,m$; $1\,m = 100\,cm$

$\Rightarrow 1\,m = 10^3\,mm$

∴ length $l = 7\,m$

$= 7 \times 10^3\,mm$

$= 7000\,mm$

breadth $b = 5\,m$

$= 5 \times 100\,cm$

$= 500\,cm.$