MFM2P NAME: Solutions

MEASUREMENT TEST REVIEW

1. Covert the following:

a) 30 L to millilitres

30,000.

= 30 000 mL

b) 10 qt to pints $1 qt = 2 pt$

qts $\frac{10}{x} = \frac{1}{2}$ cross x

pts $20 = x$ ∴ 20 pts.

c) 34 000 ml to litres

34,000.

= 34 L

d) 340 lb to kilograms $1 lb = 0.454 kg$

lbs. $\frac{340}{x} = \frac{1}{0.454}$ cross x

kgs. $154.36 = x$ ∴ 154.36 kg

e) 15 ft to metres $1 ft = 0.3048 m$

ft $\frac{15}{x} = \frac{1}{0.3048}$ $x = 4.572$

m ∴ 4.57 m

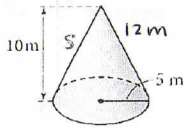
f) 48 inches to feet $12 in = 1 ft$

in $\frac{48}{x} = \frac{12}{1}$

ft $\frac{48}{12} = \frac{12x}{12}$ $4 = x$ ∴ 4 ft

2. Calculate the surface area of the following shapes.

a)

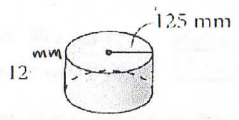


$A = \pi r^2 + \pi rs$

$= \pi(5)^2 + \pi(5)(12)$

$= 266.9 m^2$

b)

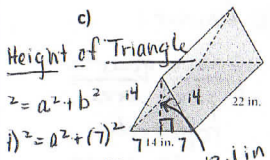


$A = 2\pi rh + 2\pi r^2$

$= 2(3.14)(125)(12) + 2(3.14)(125)^2$

$= 107\,545 mm^2$

c)



Height of Triangle

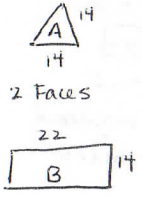
$c^2 = a^2 + b^2$

$14^2 = a^2 + (7)^2$

$196 = a^2 + 49$

$147 = a^2$

$12.1 = a$



$A_A = \left(\frac{bh}{2}\right) \times 2$ ← # Faces

$= \left(\frac{14(12.1)}{2}\right) \times 2$

$= 169.4 in^2$

$A_B = (l \times w)(3)$ ← # Faces

$= (22 \times 14)(3)$

$= 924 in^2$

Total $= A_A + A_B$

$= 169.4 + 924$

$= 1093.4 in^2$

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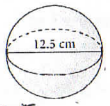
Calculate surface area continued...

d)



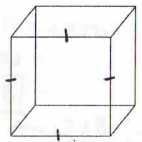
$r = \frac{12.5}{2} = 6.25$

$A = 4\pi r^2$

$= 4(3.14)(6.25)^2$

$= 490.63 cm^2$

e)



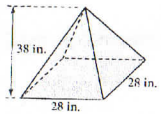
$A = (l \times w) \times 6$ ← 6 sides on a cube.

$= (121.4 \times 121.4) \times 6$

$= 88\,427.76 cm^2$

3. Calculate the volume of the following shapes.

a)

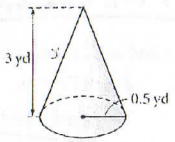


$V = \frac{(l \times w) \times h}{3}$

$= \frac{(28 \times 28) \times 38}{3}$

$= 9930.67 in^3$

b)

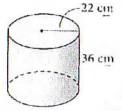


$V = \frac{\pi r^2 h}{3}$

$= \frac{(3.14)(0.5)^2(3)}{3}$

$= 0.785 yd^3$

c)

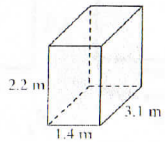


$V = \pi r^2 h$

$= (3.14)(22)^2(36)$

$= 54\,711.36 cm^3$

d)

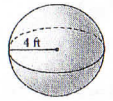


$V = lwh$

$= (3.1)(1.4)(2.2)$

$= 9.5 m^3$

e)

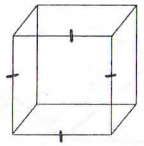


$V = \frac{4\pi r^3}{3}$

$= \frac{4(3.14)(4)^3}{3}$

$= 267.95 ft^3$

f)



$V = lwh$

$= (57.2)(57.2)(57.2)$

$= 187\,149.25 in^3$