Homework

10.6 Worksheet 6-9

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10.6
#8. a) $V = \pi r^2 h$
$= \pi (0.8\,m)^2 (1.2\,m)$
$= 2.41\,m^3$

b) $5.7\,cm = 0.057\,m \quad r = 0.0285$
$V = \frac{4}{3}\pi r^3$
$= \frac{4}{3}\pi (0.0285\,m)^3$
$= 0.000097\,m^3$

$\frac{2.41}{0.000097} = 24\,845$ billard balls

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10.6
#9. $V = \pi r^2 h$
$= \pi (15.2)^2 (600)$
$= 435\,500\,cm^3$

$435\,500\,cm^3 \times \frac{1\,ml}{1\,cm^3} \times \frac{1\,l}{1000\,ml} = 435.5\,l$

b) $V_{(water)} = \pi r^2 h$
$= \pi (19.6)^2 (600)$
$= 724\,124.5\,cm^3$

$V_{pipe} = 724\,124.5 - 435\,500$
$= 288\,624.5\,cm^3$

$1\,cm^3 = 12.6\,g$

$Mass = 288\,624.5\,cm^3 \times \frac{12.6\,g}{1\,cm^3} \times \frac{1\,Kg}{1000\,g}$

$= 3636.7\,Kg$

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2. a) $V = \frac{4}{3}\pi r^3$
$= \frac{4}{3}\pi (3mm)^3$
$= 36\pi$
$= 113\,mm^3$

b) $2r$
$(2)^3 = 8$

c) $4r$
$4^3 = 64$

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5. $r = \frac{54}{2}$

a) $= 27\text{ mm}$

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

$= \frac{4}{3}\pi (27\text{mm})^3$

$= 82448\text{ mm}^3$

$V_{cube} = l \times w \times h$

$= 54 \times 54 \times 54$

$= 157464\text{ mm}^3$

Volume (ground) $= 157464 - 82448$

$= 75016\text{ mm}^3$

b) $\frac{75016}{157464} \times 100\% = 47.6\%$

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1. a) $\frac{V}{SA} = \frac{l^3}{6l^2}$

$= \frac{l}{6}$

b) $\frac{V}{SA} = \frac{\frac{4}{3}\pi r^3}{4\pi r^2}$

$= \frac{r}{3}$

$\frac{4}{3} \div 4$

$\frac{4}{3} \times \frac{1}{4} = \frac{1}{3}$

c) $\frac{6l^2}{6} = \frac{4\pi r^2}{6}$

$l^2 = \frac{4\pi r^2}{6}$

$l = \sqrt{\frac{4\pi r^2}{6}}$

$\doteq 1.44r$

d) $V_{cube} = V_{sphere}$

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

$l = \sqrt[3]{\frac{4}{3}\pi r^3}$

$\doteq 1.61r$

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2.

a) $V = \pi r^2 h$ $r = 762\,mm / 2$

$= 0.381\,m$

$= \pi(0.381)^2(1000m)$

$=$

b) $V = \pi(1)^2(528)$ $d = 24in \times \frac{1\,ft}{12in}$

$=$ $= 2\,ft$

$r = 1\,ft$

c) Canada

$V = \pi r^2 h$

$= \pi(0.381)^2(567\,000)$

$=$ m^3

$\_\_\_\_\ m^3 \times \frac{1000\,l}{1m^3} =$

United States

$V = \pi r^2 h$

$= \pi(0.305)^2(535\,000)$

$=$

$\_\_\_\_\ m^3 \times \frac{1000\,l}{1m^3} =$

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Attachments

6.3 - Build Your Skills Solutions.pdf