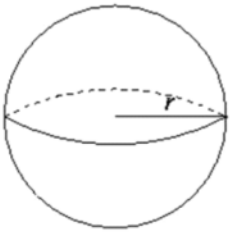
Section 1.6

October 1, 2012
12:41 PM

Math 10 N Douglas

Section 1.6
Surface Area and Volume of a Sphere

SURFACE AREA OF A SPHERE:



$SA = 4\pi r^2$

$r \rightarrow$ radius

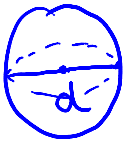
Example 1: The diameter of a volleyball is 26in. What is the surface area of a volleyball to the nearest square inch?

$r = 13in$

$SA = 4\pi(13)^2$
$= 4\pi(169)$
$= 2123.7in^2$

$\boxed{SA = 2124in^2}$

Example 2: The surface area of a baseball is 28 in.². What is the diameter of a baseball to the nearest inch?



$SA = 28in^2$

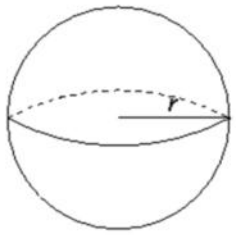
$SA = 4\pi r^2$
$28 = 4\pi r^2$
$\frac{28}{12.56} = \frac{12.56r^2}{12.56}$
$2.22 = r^2$
$\sqrt{2.22} = r^2$

$1.5 = r$

$d = 2r$
$= 2(1.5)$

$\boxed{d = 3in}$

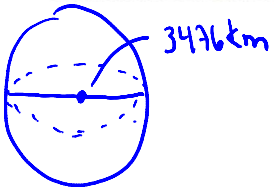
VOLUME OF A SPHERE:



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

$r \rightarrow$ radius

Example 3: The moon is approximately a sphere and has a diameter of 3476km. What is the approximate volume of the moon?



$d = 3476$

$r = 1738$

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

$$= \frac{4\pi(1738)^3}{3}$$

$$\boxed{V = 21990642870}$$

2.199064287 E10

$\boxed{2.199064287 \times 10^{10}}$

HW: pg. 51 – 53
3 – 9, 10, 12, 14, 16, 18, 20, 21