**Unit 12 Homework Packet**

**Answers**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit 12 (Surface Area & Volume) – Answers**

**HW #12-1 – Surface Area of Rectangular Prisms and Cubes**

1. 366 in2
2. 
3. 96 ft2
4. 9.6 cm2

**HW #12-2 – Surface Area of Triangular Prisms**

1. 69 in2 (If you got 69.75, you used the wrong #’s on the triangle…not a math error, concept error!)
2. 155 cm2
3. 4,965 cm2
4. 756 cm2

**HW #12-3 – Surface Area of Square and Triangular Pyramids**

1. 833 m2
2. 96 in2
3. 45 in2
4. A) 896 cm2

B) The student did not use the triangle’s height, but the pyramid’s height, in finding the surface area.

**HW #12-4 – Volume of Rectangular Prisms and Cubes**

1. 160 cm3
2. 
3. 8
4. 9.7 ft
5. 431.73 in3
6. Freezer A is a better buy. Freezer A is $70.00 per ft3 and Freezer B is $77.78 per ft3, $70 is less than $77.78.
7. 9.5 cubic units; The volume of the top rectangular prism is 7.5 cubic units and the volume of the bottom rectangular prism is 2 cubic units, for a total of 9.5 cubic units.

**HW #12-5 – Volume of Triangular Prisms**

1. 1,250 cm3
2. 288 cm3
3. 30.24 yd3
4. A) 165.6 ft3

B) $496.80

**HW #12-6 – Volume of Square and Triangular Pyramids**

1. ≈1,349 m3 (If you answered ≈1541 m3, you need to use the pyramid height)
2. 50 in3
3. 48 in3
4. 340 cm3

**HW #12-7 – Volume of a Cylinder**

1. 612π mm3
2. π ft3
3. ≈67 cm3
4. ≈2,827.4 in3
5. 20π cm3

**HW #12-8 – Volume of a Cone**

1. 48π mm3
2. ≈933.9 in3
3. 83 m3
4. Cylinder volume = 96π cm3

Cone volume = 96π cm3

Neither has the greater volume; the volumes are equal.

1. A) 96π in3

B) 16π in3

C) 6 full cones will fit in the cylinder because 96π in3 divided by 16π in3 is 6. Therefore 6 full cones will completely fill the cylinder without overflowing.

**HW #12-9 – Volume of a Sphere**

1. 
2. 36π in3

in.

1. A
2. 448.9 in3
3. A) Answers will vary.

B) Cone volume = 26.25π mm3

C) Sphere volume = 

D) The sphere has a greater volume than the cone because is is greater than 26.25π mm3.

1. 

**HW #12-10 – Volume of a Hemisphere**

1. 
2. 2094 cm3
3. 
4. 366.912π mm3
5. 
6. 