Name: **Key**

Surface Area and Volume Test Review

1. Surface Area= **672 cm²**

20 cm
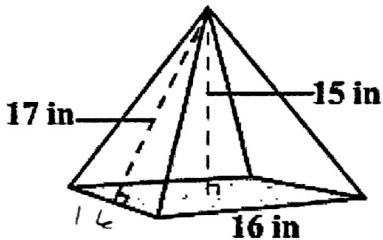
16 cm

10 cm

12 cm
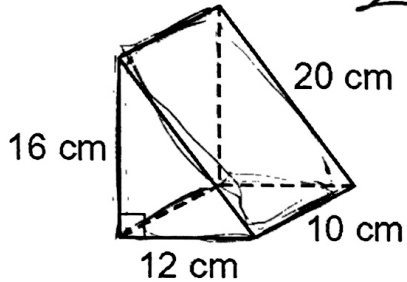
$SA = 2A + 2B$

$3\square + 2\triangle$

$20 \cdot 10 + 12 \cdot 10 + 16 \cdot 10 + 2\left(\frac{1}{2} 12 \cdot 16\right)$

2. Surface Area: _____

17 in

15 in

16 in

17

16

16

$4\triangle + 1\square$

$4\left(\frac{1}{2}(16)(17)\right) + 256 \quad 16^2$

800 in² B

3. David wants to wrap the columns outside a building in paper for a party. The columns are 10 feet tall and have a circumference of 40 inches. How much wrapping paper does he need?

white House

$LA = 2\pi r h$

$2\pi(6.367)(10)$

$LA = 400.05$

$C = 2\pi r$

$40 = 2\pi r$

$\frac{40}{2} = \frac{2\pi r}{2}$

$\frac{20}{\pi} = \frac{\pi r}{\pi}$

$r = 6.367$

4. Find the Volume of the Prism in Number 1: **960 cm³**

$\frac{1}{2}(16)(12)10 =$

5. Find the volume of the pyramid in Number 2: **1280 in³**
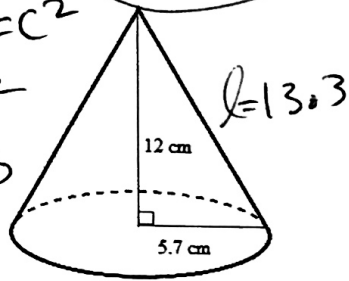
$\frac{1}{3}(16)^2 15$

6. Find the Surface Area: $\underline{\quad 340.2 \ cm^2 \quad}$

$12^2 + 5.7^2 = C^2$

$176.49 = C^2$

$C = 13.3$

$\ell = 13.3$

12 cm

5.7 cm

$SA = LA + B$

$\pi r \ell + \pi r^2$

$\pi (5.7)(13.3) + \pi (5.7)^2$

7. Find the Volume: $\underline{\qquad\qquad}$

6   8

12   12

10

6

10

7

8

$V = Bh$

$V = \left(\frac{1}{2} 6 \cdot 8\right) 12 = \boxed{288 \ cm^3}$
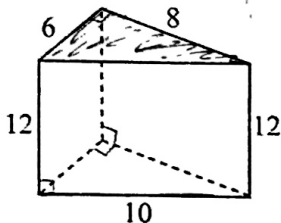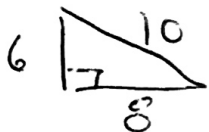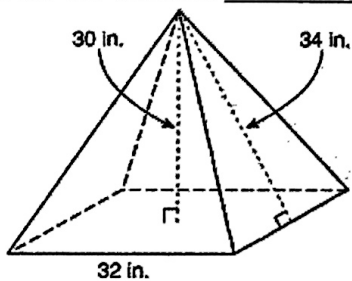
5.7 yd   13.3 yd   .056

÷3   ÷3   ÷36

8. A concrete driveway is being poured 17 feet by 40 feet by 2 inches. How much concrete is needed? How much will the drive way cost if concrete is 24 dollars per **cubic yard**?

$5.7 \times 13.3 \times 0.056 = 4.24 \ yd^3$

$\times 24$

$\boxed{\# 101.76}$

9. Find the Volume: $\underline{\qquad\qquad}$

30 in.   34 in.

32 in.

$\frac{1}{3}(32^2)(30)$

$10240 \ in^3$
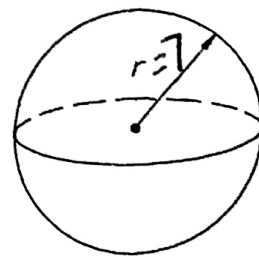
10. Surface Area: <u>615.75 units²</u>

Volume: <u>1436.76 units³</u>

$SA = 4\pi r^2$

$4\pi 49$

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

$\frac{4}{3}\pi 7^3$

11. Similar? If so what is the similarity ratio?

3 ft

1 ft

21 ft

7 ft

16 ft

5 ft

C
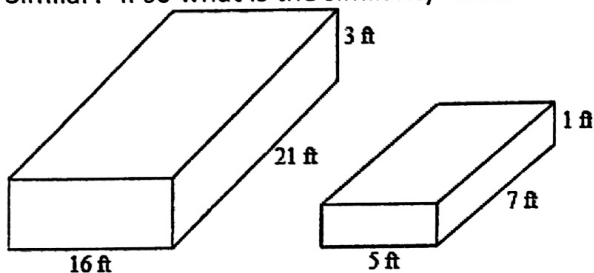
$\frac{16}{5} = \frac{21}{7} = \frac{3}{1}$

$\frac{16}{5} = 3 = 3$

Not Similar

12. Find the volume of Solid #2

<u>Solid #1</u>   <u>Solid #2</u>
SA = 1100 yd²   SA = 176 yd²
V = 19000 yd³   V = ?

$\frac{176 yd^2}{1100 yd^2} = \frac{X yd^3}{19000 yd^3}$

$\frac{\sqrt{4}}{\sqrt{25}}$

$\left(\frac{2}{5}\right)^3$

O

$\frac{152000}{125} = \frac{125x}{125}$

$\frac{8}{125} = \frac{x}{19000}$

$X = 1216 yd^3$