13.4 Similar Solids

- Similar solids are solids which have the same shape but different in size.
- The ratio of corresponding parts is called the Scale factor OR SLR.
- In order for two solids to be similar, all corresponding parts must have the same SLR / Scale factor.

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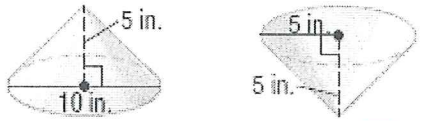
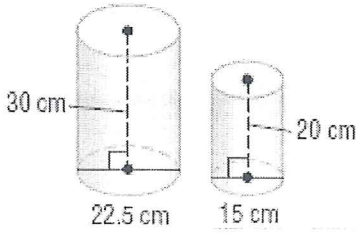
Ex1 Determine if the two solids are similar, congruent or neither.

1.



SLR = Scale Factor is $\frac{5}{5} = 1$ ✓

2.



$\frac{30}{20} = \frac{3}{2}$ ✓

$\frac{11.25}{7.5} = \frac{3}{2}$ ✓

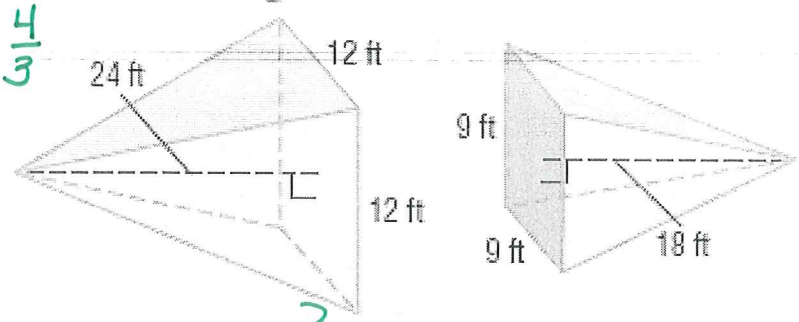
Similar must check all Parts!

- If two solids are similar and their scale factor is a:b then:
  - The ratio of surface area is $a^2 : b^2$
  - The ratio of volumes is $a^3 : b^3$

Ex2

For Exercises 3–5, refer to the pyramids on the right.

3. Find the scale factor of the two pyramids. $\frac{12}{9} = \frac{4}{3}$
4. Find the ratio of the surface areas of the two pyramids.
5. Find the ratio of the volumes of the two pyramids.



4.) $\left(\frac{4}{3}\right)^2 = \frac{16}{9}$

5.) $VR = SLR^3$

$V = \left(\frac{4}{3}\right)^3 = \frac{64}{27}$

Homework:

Pg 754, #s: 7-31 odd

(You may have to do evens to get answers to odds).