MrF

GRADE 11 ESSENTIAL
VOLUME OF PYRAMIDS AND CONES

Name: _____
Date: _____

Use an **accurate value** of π for these calculations.

In this exercise let's round the final calculation to '**three significant digits**'. The idea of significant digits is to have a certain realistic degree of accuracy. So for example:

a. 342.56 cm^3 would become 342 cm^3 . You only keep the three highest digits and in their proper place value(s).
b. 13,416.883 in^3 would become 13,400in^3. We only kept the three digits in the highest place values, the remaining places after rounding get filled with zeros.
c. 5,738.2 cm would become 5740 cm. Notice how the 'tens' place value was rounded up since the 'ones' place was '5' or more.

(using 'significant digits' is the proper manner to write final calculations to a proper accuracy)

Find the **volume** of the figures: (an answer is given **so show your work**!) (**but** show **your** final answers to *three significant digits*)
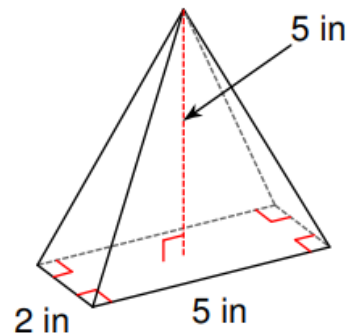
1.
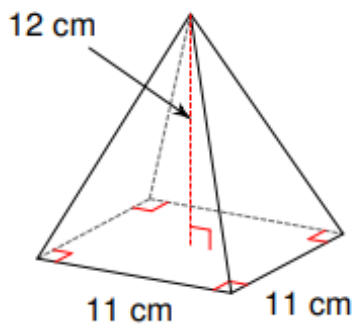
12 cm

11 cm   11 cm

484 cm³

$V = \frac{1}{3} \cdot Base_{AREA} \cdot h_{prism}$
$V = \frac{1}{3} \cdot (11cm \cdot 11cm) \cdot 12cm$
$V = 484 \, cm^3$
        or mℓ

2.

5 in

2 in   5 in

16.7 in³

3.

7 mi   2 mi

29.3 mi³

4.

18 mi

18 mi

1526.8 mi³

5.

4 mi

3 mi   4 mi

5 mi

8 mi³

6.

12 ft

6 ft   8 ft

10 ft

96 ft³

7. Tricky one!

9 m

6 m

5.2 m

280.8 m³

8. A sphere

21.6 cm
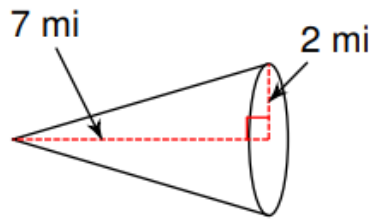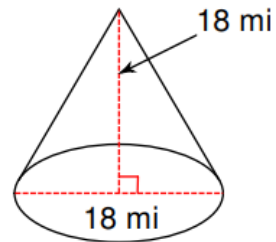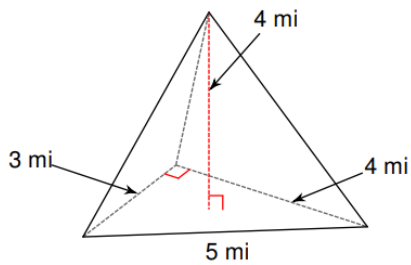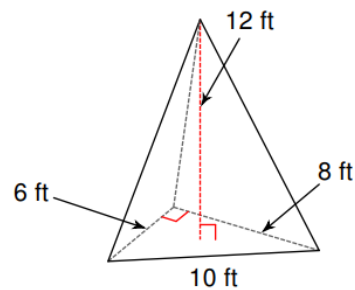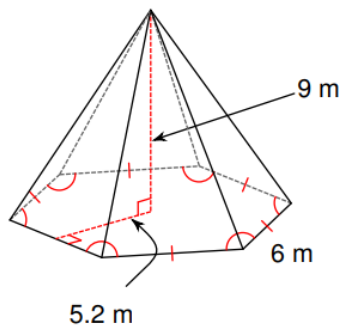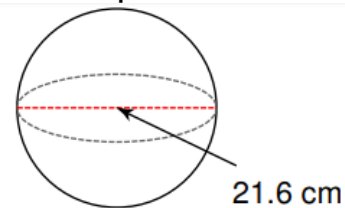
5276.7 cm³

9.
A square pyramid measuring 10 yd along each
edge of the base with a height of 6 yd.

200 yd³

10.
A cone with radius 4 m and a height of 12 m.

201.1 m³