VOLUME OF A CONE SHEET 1

Use the radius and height measurements to find the volume of these cones.
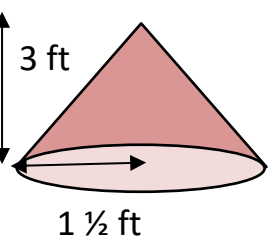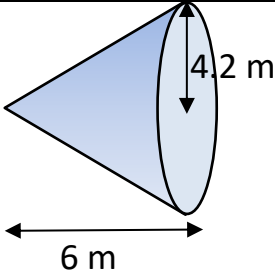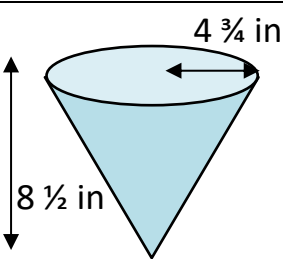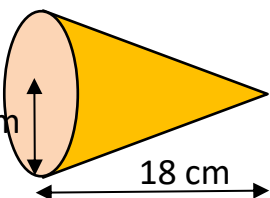*Give your answers to 1 decimal place.*

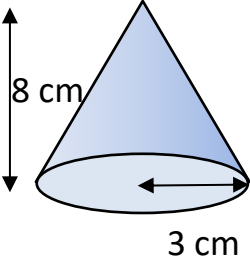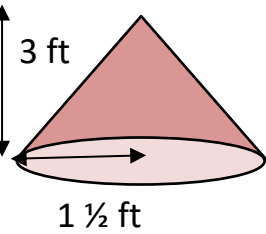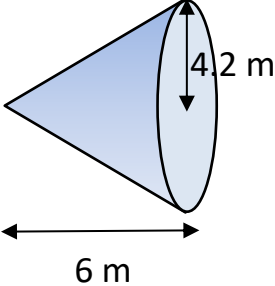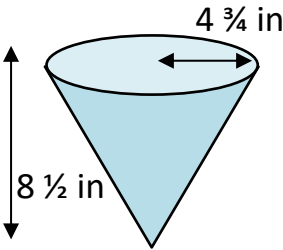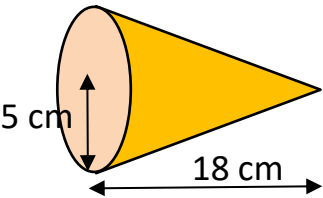| CONE	WORKING OUT	VOLUME
1) 8 cm 3 cm		
2) 3 ft 1 ½ ft		
3) 4.2 m 6 m		
4) 4 ¾ in 8 ½ in		
5) 5 cm 18 cm		

VOLUME OF A CONE SHEET 1 ANSWERS

CONE	WORKING OUT	VOLUME
1) 8 cm 3 cm	Volume of a cone = $\frac{1}{3}\pi\, r^2\, h$ = $\frac{1}{3}\pi \cdot 3^2 \cdot 8 = \frac{1}{3}\pi \cdot 9 \cdot 8 = \frac{1}{3}\pi \cdot 72$ = 24π = 75.4 cm^3 to 1 decimal place	75.4 cm^3 to 1 decimal place
2) 3 ft 1 ½ ft	Volume of a cone = $\frac{1}{3}\pi\, r^2\, h$ = $\frac{1}{3}\pi \cdot (1\,\frac{1}{2})^2 \cdot 3 = \frac{1}{3}\pi \cdot \frac{9}{4} \cdot 3$ = $\frac{9}{4}\pi$ = 7.1 ft^3 to 1 decimal place	7.1 ft^3 to 1 decimal place
3) 4.2 m 6 m	This cone is lying on its side, so the radius is 4.2 m and the height is 6 m. Volume of a cone = $\frac{1}{3}\pi\, r^2\, h$ = $\frac{1}{3}\pi \cdot (4.2)^2 \cdot 6 = \frac{1}{3}\pi \cdot (17.64) \cdot 6$ = $35.28\,\pi$ = 110.8 m^3 to 1 decimal place	110.8 m^3 to 1 decimal place
4) 4 ¾ in 8 ½ in	Volume of a cone = $\frac{1}{3}\pi\, r^2\, h$ = $\frac{1}{3}\pi \cdot (4\,\frac{3}{4})^2 \cdot 8\,\frac{1}{2} = \frac{1}{3}\pi \cdot \frac{361}{16} \cdot \frac{17}{2}$ = $\frac{6137}{96}\pi$ = 200.8 in^3 to 1 decimal place	200.8 in^3 to 1 decimal place
5) 5 cm 18 cm	This cone is lying on its side, so the radius is 5 cm and the height is 18 cm. Volume of a cone = $\frac{1}{3}\pi\, r^2\, h$ = $\frac{1}{3}\pi \cdot (5)^2 \cdot 18 = \frac{1}{3}\pi \cdot 25 \cdot 18$ = 150π = 471.2 cm^3 to 1 decimal place	471.2 cm^3 to 1 decimal place