

Outcome 2 - Calculating the volume of a cone

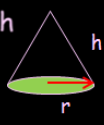
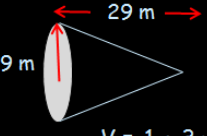
Bronze examples

Examples... $V = \frac{1}{3} \pi r^2 h$

****Given on formula sheet****

- Sub into formula

$$V = 1 \div 3 \times 3.14 \times 8^2 \times 19$$

$$= 1272.75 \text{ cm}^3$$



$$V = 1 \div 3 \times 3.14 \times 9^2 \times 29$$

$$= 2458.62 \text{ m}^3$$

Silver examples

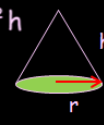
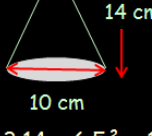
Examples... $V = \frac{1}{3} \pi r^2 h$

****Given on formula sheet****

- Sub into formula

radius = $\frac{1}{2} \times$ diameter

$$V = 1 \div 3 \times 3.14 \times 5^2 \times 14$$

$$= 366.33 \text{ cm}^3$$



$$V = 1 \div 3 \times 3.14 \times 6.5^2 \times 19$$

$$= 840.21 \text{ m}^3$$

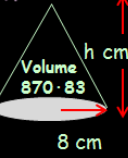
Gold examples

Examples... $V = \frac{1}{3} \pi r^2 h$

$870.83 = 1 \div 3 \times 3.14 \times 8^2 \times h$

$(1 \div 3 \times 3.14 \times 8^2 = 66.99)$

$h = 870.83 \div 66.99 = 13.0 \text{ cm}$



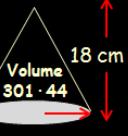
- Sub into formula
- Side calculation
- Divide

$301.44 = 1 \div 3 \times 3.14 \times r^2 \times 18$

$(1 \div 3 \times 3.14 \times 18 = 18.84)$

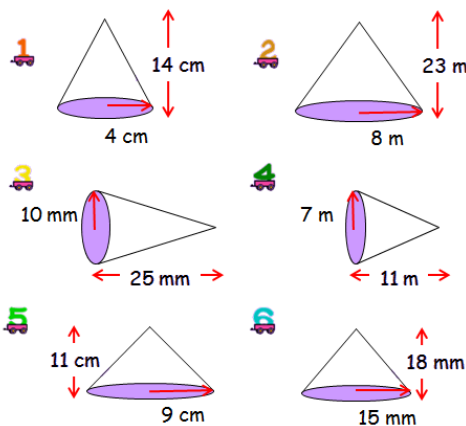
$r^2 = 301.44 \div 18.84 = 16$

- Square root $r = \sqrt{16} = 4 \text{ cm}$



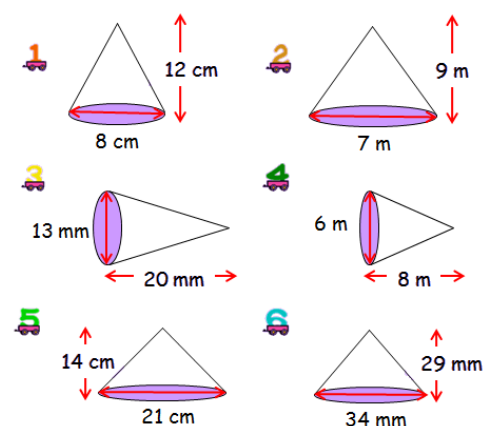
Bronze Questions

Find the volumes of the following cones...



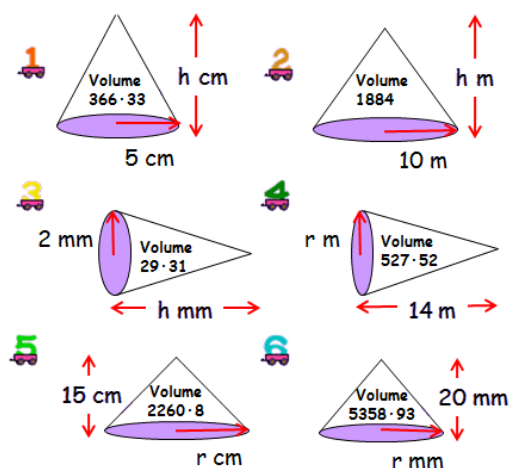
Silver Questions

Find the volumes of the following cones...



Gold Questions

Find the missing heights/radii of the following cones...



Bronze Answers

- | | |
|---------------------------|--------------------------|
| 1. 234.45 cm^3 | 2. 1540.69 m^3 |
| 3. 2616.67 mm^3 | 4. 564.15 m^3 |
| 5. 932.58 cm^3 | 6. 4239 mm^3 |

Silver Answers

- | | |
|---------------------------|---------------------------|
| 1. 200.96 cm^3 | 2. 115.40 m^3 |
| 3. 884.43 mm^3 | 4. 75.36 m^3 |
| 5. 1615.53 cm^3 | 6. 8772.11 mm^3 |

Gold Answers

- | | |
|----------|----------|
| 1. 14 cm | 2. 18 m |
| 3. 7 mm | 4. 6 m |
| 5. 12 cm | 6. 16 mm |