

Question	Answer	Mark	Mark scheme	Additional guidance
16	15	P1	<p>for process to find volume of cylinder or volume of cone,</p> <p>eg <math>\pi \times 8^2 \times \frac{h}{3}</math> oe or <math>\frac{1}{3} \times \pi \times 8^2 \times h</math> oe</p> <p>or <math>\pi \times 8^2 \times H</math> oe or <math>\frac{1}{3} \times \pi \times 8^2 \times 3H</math> oe</p> <p>or <math>\pi \times 8^2 \times \frac{x}{4}</math> oe or <math>\frac{1}{3} \times \pi \times 8^2 \times \frac{3x}{4}</math> oe</p> <p>P1 (dep P1) for setting up an equation in terms of one variable,</p> <p>eg "<math>\pi \times 8^2 \times \frac{h}{3} + \frac{1}{3} \times \pi \times 8^2 \times h</math>" = 640<math>\pi</math> oe</p> <p>or "<math>\pi \times 8^2 \times H + \frac{1}{3} \times \pi \times 8^2 \times 3H</math>" = 640<math>\pi</math> oe</p> <p>or "<math>\pi \times 8^2 \times \frac{x}{4} + \frac{1}{3} \times \pi \times 8^2 \times \frac{3x}{4}</math>" = 640<math>\pi</math> oe</p> <p>or "<math>\pi \times 8^2 \times \frac{h}{3}</math>" = 320<math>\pi</math> oe or "<math>\frac{1}{3} \times \pi \times 8^2 \times h</math>" = 320<math>\pi</math> oe</p> <p>or "<math>\pi \times 8^2 \times H</math>" = 320<math>\pi</math> oe or "<math>\frac{1}{3} \times \pi \times 8^2 \times 3H</math>" = 320<math>\pi</math> oe</p> <p>or "<math>\pi \times 8^2 \times \frac{x}{4}</math>" = 320<math>\pi</math> oe or "<math>\frac{1}{3} \times \pi \times 8^2 \times \frac{3x}{4}</math>" = 320<math>\pi</math> oe</p>	<p><math>h</math> = height of the cone  <math>H</math> = height of the cylinder  <math>x</math> = total height of the shape  Allow any letter for <math>h</math>, <math>H</math> and <math>x</math>, does not have to be defined for the award of the marks  The award of all marks requires the substitution of <math>r = 8</math>, allow this to be done at a later stage in the question</p> <p>A correct equation implies the first P1  Allow inconsistent use of <math>\pi</math> within their equation provided the correct volumes are seen previously</p>

Question	Answer	Mark	Mark scheme	Additional guidance
		P1	<p>(dep P2) for process to solve for <math>h</math> or <math>H</math> or <math>x</math></p> <p>eg (<math>h =</math>) <math>\frac{640\pi}{\frac{1}{3} \times \pi \times 8^2 + \frac{1}{3} \times \pi \times 8^2}</math> oe eg (<math>h =</math>) <math>\frac{3 \times 640\pi}{"64\pi" + "64\pi"}</math></p> <p>or (<math>H =</math>) <math>\frac{640\pi}{\pi \times 8^2 + \frac{1}{3} \times \pi \times 8^2 \times 3}</math> (= 5) oe eg (<math>h =</math>) <math>\frac{640\pi}{"64\pi" + "64\pi"}</math> (= 5)</p> <p>or (<math>x =</math>) <math>\frac{640\pi}{\pi \times 8^2 \times \frac{1}{4} + \frac{1}{3} \times \pi \times 8^2 \times \frac{3}{4}}</math> (= 20) oe eg (<math>x =</math>) <math>\frac{640\pi}{"32\pi"}</math> (= 20)</p>	<p>Can be an equation in the form <math>ah = p</math> or <math>bH = q</math> or <math>cx = r</math> where <math>a</math> or <math>b</math> or <math>c</math> is an integer</p>
		A1	cao	Award 0 marks for a correct answer with no (or incorrect) supportive working