

**Cylinders**

November 2022 Paper 3

Question	Answer	Mark	Mark scheme	Additional guidance
24	Yes (supported)	P1	for a process to find the volume of 1 tank eg $\pi \times 40^2 \times 160$ (= 804247.7... or 804.2...or $256000\pi$ )	Could be truncated or rounded
		P1	for complete process to find the volume of 4 tanks, [volume of tank] $\times$ 4 eg $\pi \times 40^2 \times 160 \times 4$ (= 3216990.8... or 3216.9... or $1024000\pi$ ) <b>or</b> for process to find volume of fertiliser available per tank eg $32 \times 1000 \div 4$ (= 8000)	For this mark [volume of tank] must come from a calculation involving $\pi$ , $r^2$ , $h$
		P1	for a process to find the amount of mixture for 1 tank eg [volume of tank] $\div$ 101 (= 7962.8...) or 4 tanks (= 31851.3...) <b>OR</b> for a process to find volume of mixture that 32 litres of fertiliser will make eg $32000 \times 101$ (= 3232000) or $32 \times 101$ (= 3232)	For this mark [volume of tank] must come from a calculation involving $\pi$ , $r^2$ , $h$ <b>or</b> be stated as their volume
		C1	for Yes supported by correct figures shown eg a comparable figure in the range 31.8 to 31.9 (litres) <b>or</b> in the range 31800 to 31900 with 32000 (cm <sup>3</sup> ) <b>or</b> in the range 3216 to 3217 with 3232 (litres) <b>or</b> in the range 3216000 to 3217000 with 3232000 (cm <sup>3</sup> ) <b>or</b> in the range 7958 to 7963 with 8000 (cm <sup>3</sup> )	There are other possible pairs of values which can be used in the comparison

## June 2023 Paper 1

Question	Answer	Mark	Mark scheme	Additional guidance
27	3	P1	for process to find area of base, eg $1200 \div 40 (= 30)$	
		P1	for process to find pressure, eg $90 \div "30"$	
		A1	cao	

## November 2024 Paper 2

Question	Answer	Mark	Mark scheme	Additional guidance
28	7.96	M1	for method to find volume of cylinder, eg $\pi \times 3^2 \times 10$ ( $= 90\pi$ or 282.74...)	[volume] is any value they clearly think is the volume of the cylinder but must come from a calculation and must not be 3 or 10
		M1	for method to find density, eg $2250 \div$ “282.74...” <b>or</b> $2250 \div$ [volume]	
		A1	for answer in the range 7.95 to 7.96	

# June 2024 Paper 3

Question	Answer	Mark	Mark scheme	Additional guidance
28	63	P1	for process to find volume, eg $\pi \times 100^2 \times 30$ (= $300\,000\pi$ or $942\,477(.796\dots)$ )	(volume =) 942 478 implies P1
		P1	for process to find time in seconds, eg “ $942\,477(.796\dots)$ ” $\div 250$ (= $1200\pi$ or $3769(.911\dots)$ ) <b>or</b> [volume] $\div 250$ <b>or</b> for converting rate to minutes, eg $250 \times 60$ (= 15 000)	(time =) 3770 implies P2  [volume] $\neq 30, 60, 100, 250$
		P1	for complete process, eg “ $3769(.911\dots)$ ” $\div 60$ (= $20\pi$ ) <b>or</b> “ $942\,477(.796\dots)$ ” $\div$ “15 000” (= $20\pi$ )	
		A1	for answer in the range 62 to 63	A correct answer with no supportive working gets 0 marks If an answer is shown in the range in working and then incorrectly rounded award full marks

November 2023 Paper 2

Question	Answer	Mark	Mark scheme	Additional guidance
28	65	P1	for a full process to find the volume of the container, eg $\pi \times 15^2 \times 43$ (= 30 394.9...)	These steps may be completed in a different order Accept $9675\pi$
		P1	for a process to convert between $\text{cm}^3$ and litres, eg “30 394.9...” $\div$ 1000 (= 30.39...) <b>or</b> [volume] $\div$ 1000 <b>or</b> $0.47 \times 1000$ (= 470)	Accept $9.675\pi$ or $\frac{387}{40}\pi$
		P1	for a complete process to find the time taken, eg [volume] $\div$ 0.47 <b>or</b> [volume] $\div$ “470”	[volume] can be any value they believe to be the volume that might have been incorrectly converted (or not at all)
		A1	answer in the range 64.6 to 65	If an answer is given in the range in working and then rounded incorrectly award full marks.