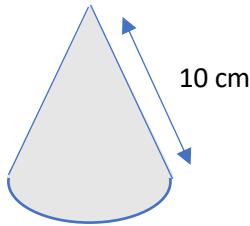
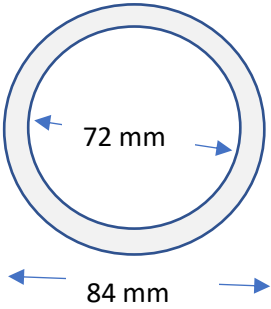
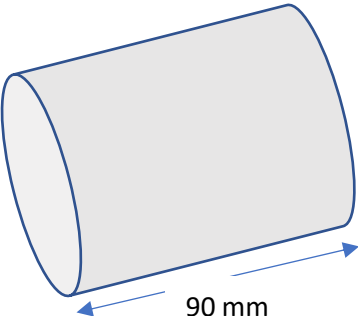


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| | S3 Nat 5 December Test – Revision 2 | 26 |
| 1 | Simplify $\frac{12w^9x^6}{4w^5x^4}$ | 3 |
| 2 | Simplify (a) $\sqrt{80} + \sqrt{5} - \sqrt{45}$ (b) $\frac{\sqrt{18}}{\sqrt{2}}$ | 3 2 |
| 3 | The formula for the volume of a sphere is $v = \frac{4}{3}\pi r^3$ If the earth has a radius of approximately 6400 km, find the volume of the earth in km^3 . Give your answer in scientific notation correct to 2 significant figures. | 3 |
| 4 | This sector of a circle has a radius of 10 cm and an area of 26 cm^2 Calculate θ , the angle at the centre of the sector |  4 |
| 5 | A company manufactures aluminium tube A cross-section of one of the tubes is shown below   The inner diameter is 72 mm, the outer diameter is 84 mm The tube is 90mm long. Calculate the volume of aluminium required to make the tube. Give your answer correct to 3 significant figures | 5 |
| 6 | Multiply out the brackets and collect like terms $(4x - 5)(3x + 2)$ | 2 |

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|----------------|--|---|
| 7 | Change the subject of the formula $A = \frac{1}{2}bh$ to b | 2 |
| 8 | Factorise $x^2 - 5x - 24$ | 2 |
| Extra Practice | | |
| 1 | Indices Examples on page 175 Question 6 and 11 on page 176 | |
| 2 | Surds Examples on page 171 Questions 2 and 7 on page 171, Question 3 on page 178 | |
| 3 | Volume and scientific notation Questions 45 to 47 on page 5 Question 76 on page 8 | |
| 4 | Arcs and sectors of circles Example on page 130 Questions 3 and 4 on page 130 | |
| 5 | Volume of solids Question 51 and 53 on page 6 Question 74(a) on page 8 | |
| 6 | Expanding brackets Examples on page 14 Questions 3 and 4 on page 15 | |
| 7 | Changing the subject of a formula Examples on page 99 Questions 6 to 9 on page 100 | |
| 8 | Factorising trinomial expression Examples on page 67 Question 2 on page 97 | |

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| Answers | |
| 1. $3w^4x^2$ | 2. (a) $2\sqrt{5}$ (b) $\sqrt{9} = 3$ |
| 3. $1.1 \times 10^{12} \text{ km}^3$ | 4. 29.8° or 30° |
| 5. $V = 132000 \text{ mm}^3$ | 6. $12x^2 + 8x - 15x - 10 = 12x^2 - 7x - 10$ |
| 7. $b = \frac{2A}{h}$ | 8. $(x - 8)(x + 3)$ |