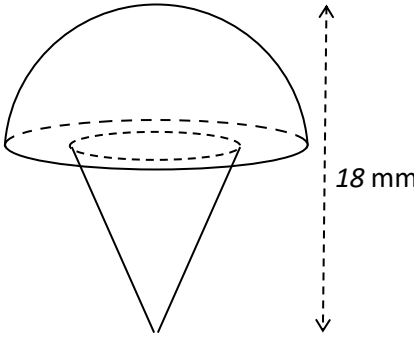


	S3 Nat 5 December Test – Revision 3	25
1	(a) Simplify $(v^5)^2$	1
	(b) Evaluate $9^{\frac{3}{2}}$	2
2	Express $\frac{22}{\sqrt{2}}$ with a rational denominator. Write your answer in the simplest form	2
3	A snail crawled 3 kilometres in 16 days. What is the average speed of this snail in metres per second. Give your answer in scientific notation correct to 2 significant figures	4
4	Expand and simplify $(2x - 5)(x^2 + 3x + 1)$	3
5	Factorise $4x^2 - 4$	2
6	Change the subject of the formula $F = 9 + b^2$ to b	2
7	<p>The diagram below shows a steel rivet which consists of a hemisphere and a cone.</p>  <p>The radius of the hemisphere is 8 millimetres The radius of the cone is 5 millimetres. The height of the whole rivet is 18 mm.</p> <p>Calculate the volume the rivet. Give your answer rounded to the nearest hundred</p> <p>[Volume of a sphere = $\frac{4}{3}\pi r^3$, Volume of a cone = $\frac{1}{3}\pi r^2 h$,]</p>	5

8	<p>A clock has a pendulum swinging below it. When the clock is ticking the pendulum travels along an arc of a circle, centre O.</p> <p>The length of the arc followed by the pendulum as it swings from P to Q is 18cm.</p> <p>The angle through which the pendulum swings (POQ) is 70°</p> <div style="text-align: center;"> </div> <p>Find the length of the connection cord OQ.</p>	4
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Extra Practice – Using the Leckie and Leckie Nat 5 Books		
1	Indices Example 2.7 on pg 18, Example 2.9 on pg 20	Question 3 on pg 19 and Q3 on pg20
2	Surds Example 1.6 on page 10	Question 2 on page 10
3	Scientific notation and significant figures Examples 11.1 to 11.7 on pages 85 – 88	Questions 6 – 8 on page 89
4	Expanding brackets Example 3.8 on page 33	Questions 1 and 3 on page 33
5	Factorising a difference of two squares Example 4.2 and 4.3 on page 37/38	Question 3 on page 37, Ex 4C on page 38
6	Changing the subject of a formula Example 15.16 to 15.18 on pages 139/140	Question 1 on page 142
7	Volume of solids Examples 10.6 on page 81	Questions 1,3 and 4 on page 82
8	Arcs and sectors of circles Examples 9.5 and 9.6 on pages 73 – 74	Question 2 1 and 2 on page 74

Answers			
1. (a) V^{10}	(b) 27	2. $11\sqrt{2}$	3. $0.002170 = 2.2 \times 10^{-3}$
4. $2x^3 + x^2 - 13x - 5$	5. $4(x + 1)(x - 1)$	6. $b = \sqrt{F - 9}$	
7. $1360.3093 \text{ mm}^3 = 1400 \text{ mm}^3$	8. radius = 15.5 cm		