



	Question 4								
Exercise 6.05	Alex eats a bacon and egg roll with an energy content of 2194 kJ. When he swims, Alex uses 2170 kJ of energy per hour. For how many minutes must he swim to work off the energy from the bacon and egg roll?								
	A 59	В	61	С	99	D	101		
Exercise 6.04	Question 5 How much energy of day for 1 year?	loes a 18 V	V compact fluore	escent l	amp use if it is c	on for 6	b hours per		
	A 6.57 kWh	В	10.80 kWh	С	39.42 kWh	D	584.0 kWh		
Exercise	Question 6	rity is 24.2	5 cents/kWh. ca	lculate	the cost of 780 l	cWh.			
6.05	A \$18.92	B	\$189.15	C	\$18.72	D	\$190.00		
	Question 7	Jotobor in	clucive the Cou	ah fam	ily used 42.7 kI	ofwat	0.5		
Exercise 6.01	Calculate their daily water usage, to the nearest litre.								
	A 516 L	В	474 L	С	464 L	D	388 L		
Exercise	Question 8								
4.01	If there is a 30% cha	ance of rain	n today, what is t	he cha	nce that it does 1	not rair	n today?		
	A 60%	В	70%	С	15%	D	20%		
Exercise 5.04	Question 9 Evaluate $(4.2 \times 10^5) \times (3.5 \times 10^{-2})$, correct to two significant figures.								
	A 1.47×10^4	В	1.4×10^{3}	C	1.5×10^{3}	D	1.5×10^{4}		
Exercise 4.05	Question 10 A coloured die has t 100 times, how man	wo red face y times car	es, three blue fac 1 the green face	es and be expe	one green face. ected to turn up?	If the c	lie is rolled		
	A 10	В	17	С	33	D	60		

Section 2 3 questions: 10 marks each

Question 11 (10 marks)

- **a** Soojung's water bill shows that water usage is charged at \$2.115/kL.
 - On her latest bill, she paid \$37.86 in water usage charges. How many kilolitres of water did she use? Answer correct to one decimal place.
 - Soojung was also charged \$41.39 for the water service, \$162.88 for the wastewater service and a recycled water charge of \$11.58. She also used 21 kL of recycled water at \$1.70/kL. What was the total of Soojung's water bill?
- **b** A dam has three vertical measurements taken at 24 m intervals.



Use two applications of the trapezoidal rule to approximate the area of the lake, correct to three significant figures.

$$\left[A \approx \frac{h}{2} \left(d_f + d_1\right)\right]$$

3 marks

2 marks

6.01

c Tiffany, Rose and Max sit in a row for a photo.

- **i** Use a tree diagram to list all possible seating arrangements.
- ii If every seating arrangement is equally likely, what is the probability that Max sits in the middle?
- iii What is the probability that Rose sits further left than Tiffany? 1 mork

28



Question 12 (10 marks)

a A biased die has sides 1, 2, 3, 3, 5 and 6. It is rolled twice and the sum of the numbers is calculated.

i The table below can be used to list all possible outcomes.

Copy and complete the table.

		Second roll					
		1	2	3	3	5	6
First roll	1	2	3	4	4	6	7
	2	3	4	5	5	7	8
	3	4	5	6	6	8	9
	3	4	5	6	6	8	9
	5						
	6						
ii How many possible outcomes are there?							
What is the probability of rolling a sum of 6?							

- iv What is the probability of rolling a sum that is an even number? 1 mark
- **b** Rainwater is collected in a water tank from the roof of a block of classrooms at a school. The area of the roof is 300 m². During a day of heavy rainfall, 15 mm of rain falls on the roof and is collected in the water tank. How many litres of water were collected?
 2 morks
- **c** The planet Venus has a diameter of 12 104 km. Assuming that it is a sphere, calculate in scientific notation, correct to four significant figures:
 - i its volume 2 marks
 - ii its surface area in hectares. 2 marks

$$\left[V = \frac{4}{3}\pi r^3, A = 4\pi r^2\right]$$



Question 13 (10 marks)

i

ii

b

An offset survey on a field, PARK, was conducted and the following notebook entries a were made by the surveyor. All measurements are in metres.

Draw a diagram of the field, showing all measurements.

Calculate the area of the field.

animal food. For one piece of newspaper, find:



150° 18 cm 18 cm

At the animal park, newspaper is cut in the shape of a sector and rolled to hold

i	its area, correct to the nearest square centimetre	1 mark
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its perimeter, correct to the nearest centimetre. ii

$$\left[\operatorname{Arc length} = \frac{\theta}{360} \times 2\pi r, \text{ Area of a sector} = \frac{\theta}{360} \times \pi r^2\right]$$

- The digits 7, 2, 3 and 6 are written on separate cards. Two cards are selected at С random to form a 2-digit number.
 - 2 marks i Use a tree diagram to list all possible outcomes.
 - ii What is the probability that the number formed is divisible by 3? 2 marks

END OF EXAMINATION





2 marks

