

Delta 3

Unit 7 (Calculator)

Accuracy and Measures

How well did you do:

Accuracy and Measures	Score = $\frac{\quad}{40}$	
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<i>Topics/skills which need to be revisited:</i>	<i>Questions from the review</i>	<i>Further Practice from Delta 3</i>
- Solve problems involving rates of change - Solve problems (SDT) involving rates of change, where the units need to be changed	1 3,4,5	- P159 Q2,3 - P159 Q4,5
Solve problems involving compound measures	2,8	P159 Q6,9
- Find upper/lower bounds of a discrete quantity - Find upper/lower bounds of a continuous quantity	6 7	- P160 Q3 - P160 Q2,5
- Work our upper/lower bounds of calculations - Work our upper/lower bounds involving area or volume	9 10,11	- P161 Q2 - P161 Q7 (top)
Work our upper/lower bounds in a problem solving situation	12	P161 Q1,3-7 (bottom)



- 1 Work out the speed, in metres per second, of a chipmunk which travelled 25 m in 2.7 seconds. Give your answer to 2 decimal places.

..... m/s

(2 marks)



- 2 A force of 65N is applied to an area of 12 cm². Given that $Pressure = \frac{Force}{Area}$, calculate the pressure in N/cm². Give your answer to 2 decimal places.

..... N/cm²

(3 marks)



- 3 A satellite travelling at a constant speed travels 480 km in 1 minute. Calculate its speed in km/h.

.....km/h

(3 marks)



- 4 The fastest jet-ski can travel at 128 km/h. What is this in metres per second to 3 significant figures?

..... m/s

(3 marks)



- 5** In 1954, Roger Bannister set an outstanding running record, being the first person to run 1 mile in under 4 minutes. His actual time was 3 mins 59.4 secs.

In 2013, Mo Farah ran the 1500 metres race in 3 mins 28.81 secs.

Given that 1 mile = 1609 metres work out the average speeds of both runners in m/s to 3 significant figures.

Roger Bannister = m/s

Mo Farah = m/s

(4 marks)

- 6 a** A local newspaper stated that 66 000 people had attended a football match. The number 66 000 had been rounded to the nearest thousand.

Write down the lower and upper bounds of this number.

i lower bound

ii upper bound

- b** A different newspaper stated that 66 100 people had attended the match, having rounded to the nearest hundred.

What is

i the lower bound

ii the upper bound?

(4 marks)

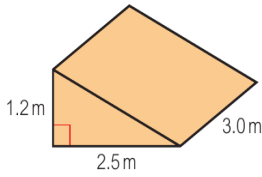
- 7** The upper and lower bounds for the mass, x kg, of an elephant are given as $4950 \leq x < 5050$. Work out the degree of accuracy that the elephant was weighed to.

.....

(1 mark)



8 This diagram shows a skateboard ramp. It is made up of solid concrete with a density of 2400kg/m^3 . Calculate the mass of the skateboard ramp.



.....kg
(3 marks)



9 $w = 37$ and $v = 21$, both rounded to the nearest whole number.

a Find the greatest possible value of wv .

.....

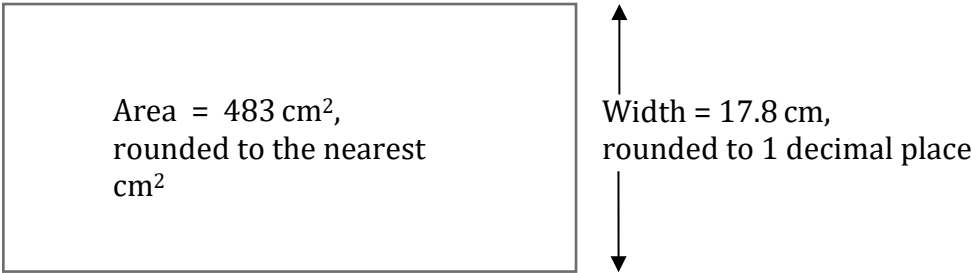
b Find the least possible value of $w^2 - v$.

.....

(5 marks)



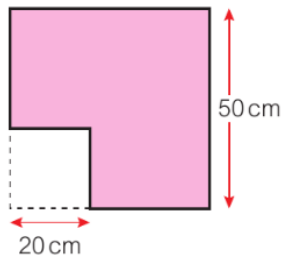
10 Work out the greatest possible length of this rectangle. Give your answer to 1 decimal place.



..... cm
(3 marks)



11 This diagram shows a square of paper. Another square has been cut out of the corner. Both measurements are correct to the nearest cm. Calculate the upper bound for the area of the paper remaining.



.....cm²

(5 marks)



12 A loaded lorry can travel 8 miles per gallon of diesel, to the nearest mile. The driving distance from Dubai to Muscat is 240 miles, to the nearest 10 miles. A driver has 33 gallons of diesel in the tank, correct to the nearest gallon. Can she definitely complete the journey from Dubai to Muscat?

(you must show your working)

.....

(4 marks)

[TOTAL 40 MARKS]