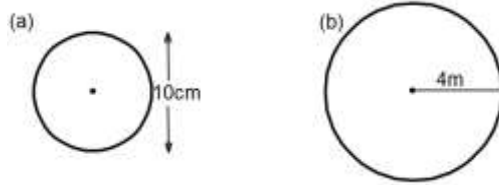


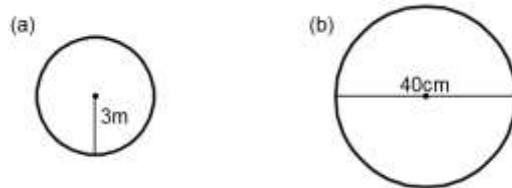
S2 Core – Test 1 Revision

1. Circle

1. Calculate the circumference of each of the following circles :-



2. Calculate the areas of each of the following circles :-



2. Expressions and Formulae

1. Evaluate the following expressions given that $a = 2$, $b = 3$, $c = 6$ and $d = 8$.

(a) $ab - d$ (b) $\frac{c + bd}{5a}$ (c) $4b^2$ (d) $c(d + a)$

2. Multiply out each of the following:-

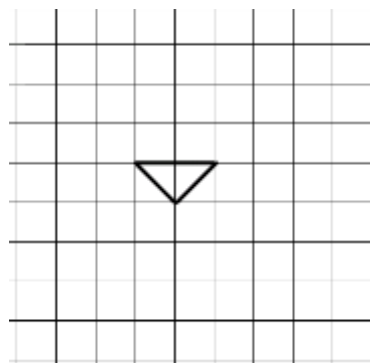
(a) $3(2x + 5)$ (b) $4(3 - 2y)$

3. Expand and simplify the following:-

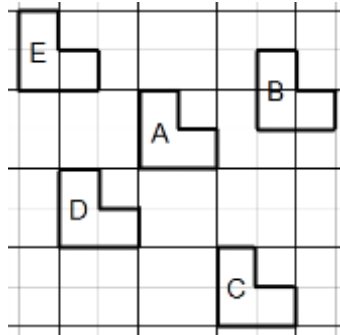
(a) $10 + 2(x - 3)$ (b) $3(2y + 1) + 5(y - 2)$ (c) $7(3t + 2) - 4(2t + 3)$

3. Transformations

1. Draw this triangle and its image under the translation $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$.



2. Write down the components of the translation which maps shape A to
 (a) shape B (b) shape C (c) shape D (d) shape E
 in the diagram below.

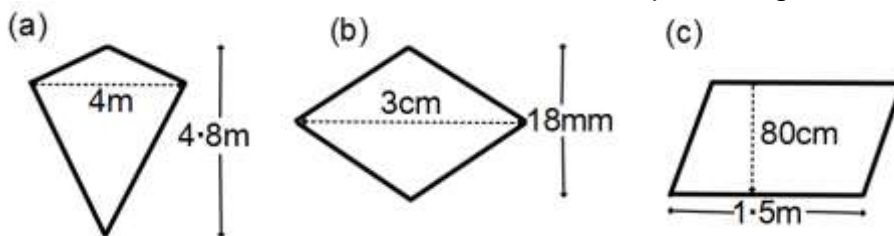


4. Distance, Speed and Time

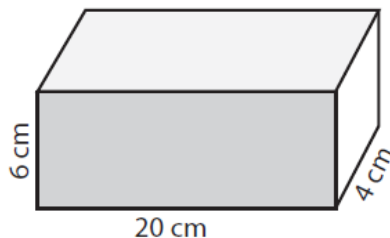
1. Jason cycles 60 kilometres in 1 hour 30 minutes.
Calculate his average speed.
2. Calculate the distance travelled in 2 hours 15 minutes at an average speed of 80 kilometres per hour.
3. How long (in hours and minutes) does it take for a journey of 70 miles at an average speed of 40 miles per hour ?

5. Area

1. Work out the area of the kite, rhombus and parallelogram shown below.



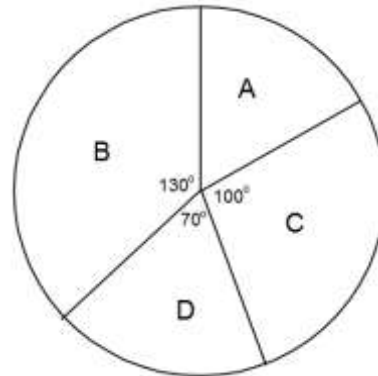
2. Work out the surface area of this cuboid



3. Convert (a) 6cm^2 into mm^2 (b) 50mm^2 into cm^2
 (c) 2m^2 into cm^2 (d) 400cm^2 into m^2

6. Information Handling

1. The pie chart shows the grades achieved by the students at Wellbeck College in a Maths exam.



One hundred and fifty students achieved a grade in the exam.
How many of them achieved grade A?

2. Last season Newtown Wanderers had 10 wins, 6 losses and 8 draws.
Complete the table and then use the information to draw a pie chart.

	Number of Games	Angle at Centre
Win	10	
Loss	6	
Draw	8	

3. The table below shows the marks scored by some pupils in a French and an Italian exam.

Name	Tom	Ann	Jim	Pat	Don	Lee	Sam	Sue
French mark	15	25	50	40	35	55	70	80
Italian mark	30	30	60	50	40	70	85	95

- (a) Draw a scattergraph to show these marks.
- (b) Draw a line of best fit on your graph.
- (c) A pupil who scored 65 in the French exam was absent for the Italian exam.
Use your line of best fit to estimate the pupil's Italian mark.

ANSWERS

1. Circle

1. (a) 31.4cm (b) 25.12m 2. (a) 28.26m^2 (b) 1256cm^2

2. Expressions and Formulae

1. (a) -2 (b) 3 (c) 36 (d) 60
2. (a) $6x + 15$ (b) $12 - 8y$
3. (a) $2x + 4$ (b) $11y - 7$ (c) $13t + 2$

3. Transformations

1. Ask your teacher to check your answer.

2. (a) $\begin{pmatrix} 3 \\ 1 \end{pmatrix}$ (b) $\begin{pmatrix} 2 \\ -4 \end{pmatrix}$ (c) $\begin{pmatrix} -2 \\ -2 \end{pmatrix}$ (d) $\begin{pmatrix} -3 \\ 2 \end{pmatrix}$

4. Distance, Speed and Time

1. 60 km/h 2. 100 km 1 hour 45 minutes

5. Area

1. (a) 9.6m^2 (b) 2.7cm^2 or 270mm^2 (c) 1.2m^2 or 12000cm^2
2. 448 cm^2 3. (a) 600 mm^2 (b) 0.5 cm^2 (c) 20000 cm^2 (d) 0.04 m^2

6. Information Handling

1. 25
2. Win 150° , Loss 90° , Draw 120° . Ask your teacher to check your pie chart.
3. Ask your teacher to check your answers.