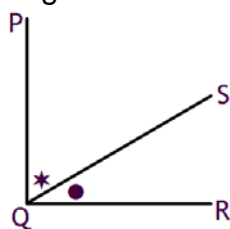


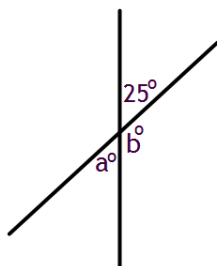
## S1 Core – Test 2 Revision

### 1. Angles

1. Write down the name of the angle marked ● in the diagram below.



2. Find the sizes of the angles marked  $a$  and  $b$  in the diagram below.



3. **Calculate** the size of the

- (a) acute angle between the hands of a clock at 4 o'clock  
(b) **reflex** angle between the hands of a clock at 5 o'clock.



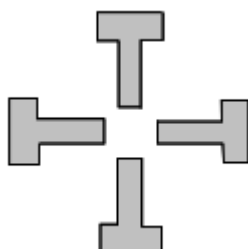
### 2. Symmetry

1. Write down the order of rotational symmetry of these shapes.

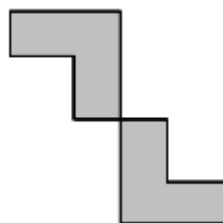
(a)



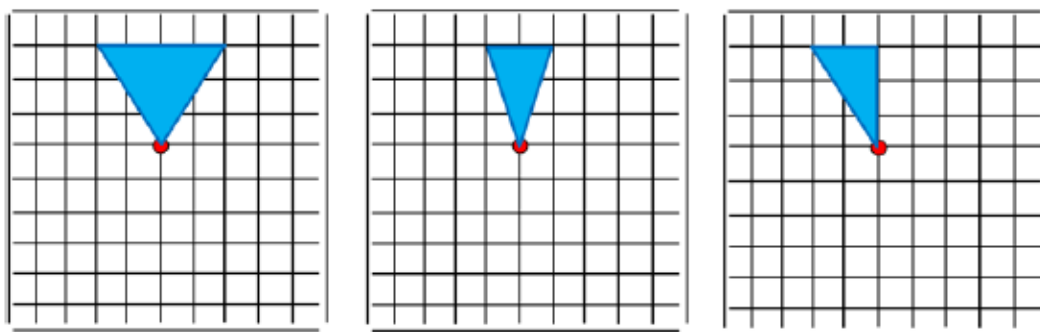
(b)



(c)



2. Rotate each shape so that it has rotational symmetry of order 4, about the dot.

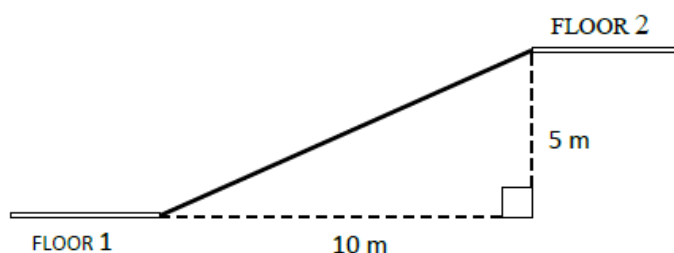


### 3. Equations

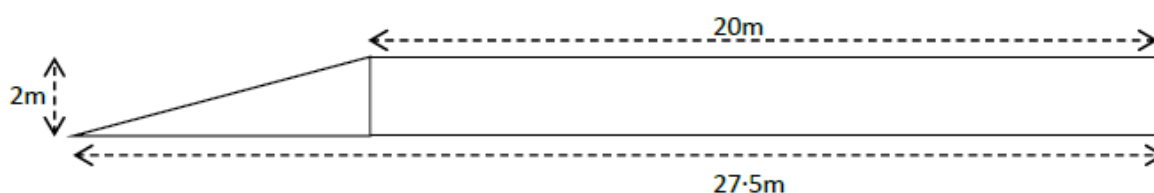
1. Solve: (a)  $6a - 1 = 41$  (b)  $\frac{t}{4} + 3 = 11$  (c)  $3n + 7 = -8$

### 4. Gradient

1. The diagram shows a ramp between two floors in a shopping centre. Find the gradient of the ramp. Give your answer in simplest form.



2. A stage is being built for an outdoor concert. It has to be 20 metres high, 2 metres high and have a ramp on one side as shown below.



To be safe the gradient of the ramp should be between 0.25 and 0.3. Is this ramp safe? Give a reason for your answer.

### 5. Time, Distance and Speed

1. A plane leaves Edinburgh at 0950 and arrives in Lanzarote at 1315. How long did the flight take?
2. The 1540 bus from Glasgow takes 3 hours 35 minutes to reach Inverness. What time should the bus arrive in Inverness?

3. Colin is going on holiday to Florida. His plane is due to leave at 12.05pm. He must be at the airport  $2\frac{1}{2}$  hours before the plane is due to leave. What is the latest time that Colin must be at the airport?
4. The Simpsons drove overnight to their hotel. They left home at 10.45pm and arrived at the hotel at 6.15am the next morning. How long did their journey take?
5. The Fraser family took 8 hours to travel from Edinburgh to London, a distance of 424 miles. What was their average speed?
6. Calculate the distance travelled in 3 hours at an average speed of 80 kilometres per hour.
7. How long does it take to run 600 metres at an average speed of 8 metres per second ?

#### **6. information Handling**

1. The table shows the number of cars sold by an American luxury car dealership one week.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Audi	52	34	17	83	214	174
BMW	83	51	8	93	187	142
Ferrari	5	12	25	67	82	96
Infinity	52	85	96	63	274	314
Jaguar	62	32	45	121	98	125
Lexus	241	58	63	124	85	96
Mercedes	97	72	25	78	124	143
Porsche	83	52	41	96	174	185

- (a) How many Mercedes were sold this week?
- (b) How many cars were sold on Wednesday?
- (c) Which car made least sales on Thursday?
- (d) How many more Ferraris were sold on Saturday compared to Tuesday?

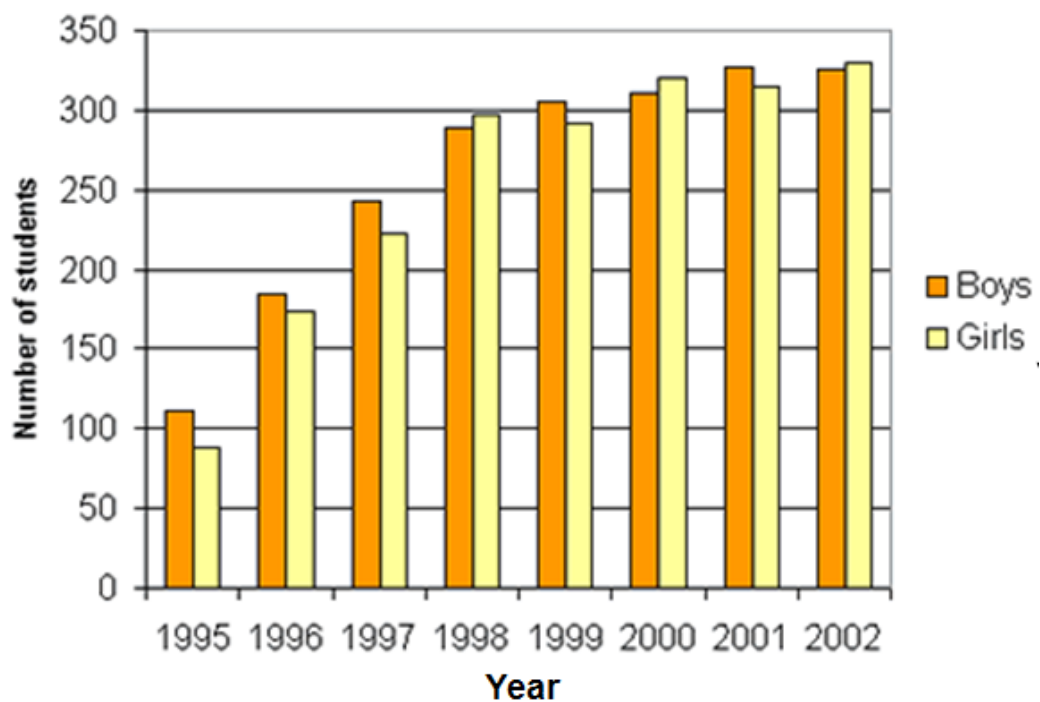
2. The figures show German test marks for class 1A.

13 18 12 10 16 12 7 15  
26 13 17 11 9 19 14 6  
13 28 11 14 4 6 15 10

Copy and complete the frequency table to show these marks.

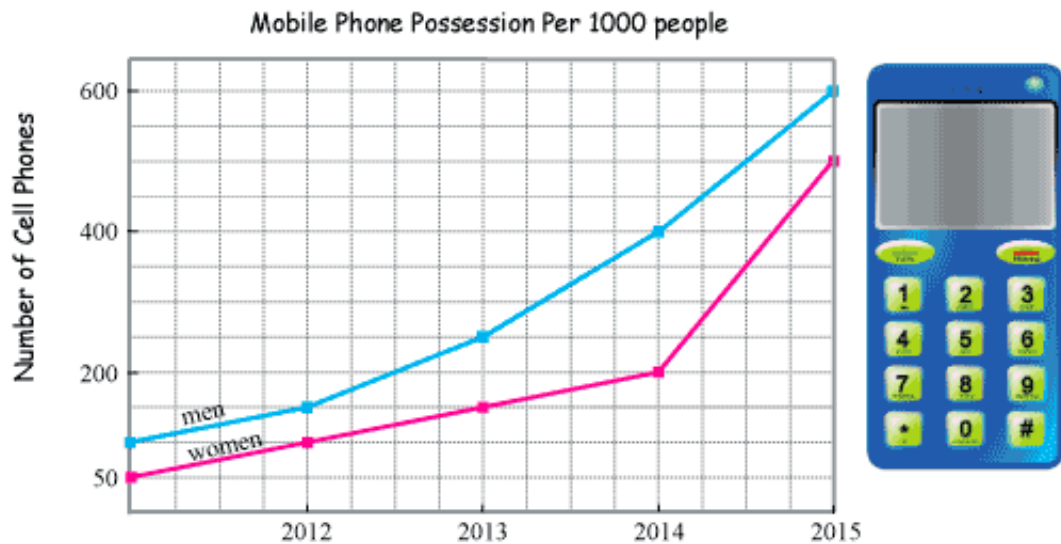
Mark	Tally marks	Frequency
0-4		
5-9		
10-14		
15-19		
20-24		
25-29		

3. The bar graph shows the number of boys and girls using the internet at Redwood High School from 1995 to 2002.



- (a) How many girls used the internet at Redwood High School in 1998?  
(b) Compare the use of the internet by both boys and girls at Redwood High School from 1995 until 2002.

4. The line graphs show the number of mobile phones a group of 100 men and women had over a period of 5 years.



- How many of the men had mobile phones in 2012?
- How many of the women had mobile phones in 2015?
- How many of the people had mobile phones in 2014?
- Describe the trend in mobile phone possession over the 5 year period.

## **7. Indices**

- Write in index form  $a \times a \times a \times a \times a \times a \times a$

## **8. Patterns and Relationships**

- Write down the first four terms of the sequence whose  $n^{\text{th}}$  term is given by the expression  $5n + 2$ .
- (a) Complete the table below for  $y = 4x - 3$ .

x	1	2	3
y			

- Draw the line  $y = 4x - 3$  on a coordinate diagram.

## ANSWERS

### 1. Angles

1. SQR or RQS      2.  $a = 25^\circ$ ,  $b = 155^\circ$       3.(a)  $120^\circ$  (b)  $210^\circ$

### 2. Symmetry

1. (a) 5 (b) 4 (c) 2      2. Ask your teacher to check your answers.

### 3. Equations

1. (a)  $a = 7$  (b)  $t = 32$  (c)  $n = -5$

### 4. Gradient

1.  $\frac{1}{2}$  or 0.5  
2. The ramp is safe as the gradient =  $\frac{2}{7.5} = 0.2666\dots$  and therefore lies between 0.25 and 0.3.

### 5. Time, Distance and Speed

1. 3 hours 25 minutes      2. 1915      3. 9.35am      4. 7 hours 30 minutes  
5. 53mph      6. 240km      7. 75 seconds or 1 minute 15 seconds

### 6. information Handling

1. (a) 539 (b) 320 (c) Infinity (d) 84  
2.

Mark	Tally marks	Frequency
0-4		1
5-9		4
10-14		11
15-19		6
20-24		0
25-29		2

3. (a) 300  
(b) Internet use increased for both boys and girls from 1995 to 2002.  
Girls used the internet more than boys in 1998, 2000 and 2002.  
4. (a) 150 (b) 500 (c) 600  
(d) Mobile phone possession increased over the 5 year period.

### 7. indices

1.  $a^7$

### 8. Patterns and Relationships

1. 7, 12, 17, 22  
2. (a) (b) Ask your teacher to check your graph.

x	1	2	3
y	1	5	9