Name: [ ]

Date: [ ]

Year 5 Reasoning Test Set 2 Paper A

1. Complete these linear sequences.

32	40		56			80	

1150	1100		1000			850	

2 marks

2. Divide three thousand, two hundred and sixty-four by six.

1 mark

3. Calculate the difference in length between these two lines.

[ ]
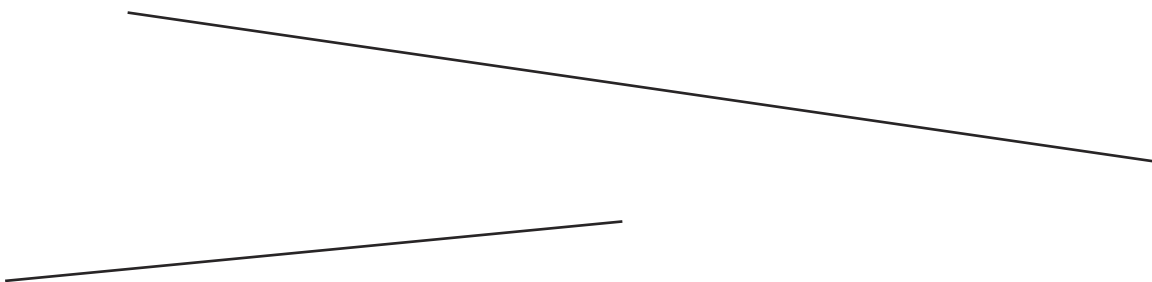
2 marks

total for this page

4. Some children placed a piece of wood vertically in the playground. They measured the length of the shadow thrown by the stick on each hour during the school day. They drew a graph of the results.
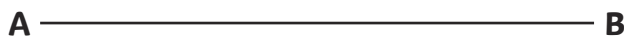
Length of Shadow During the Day
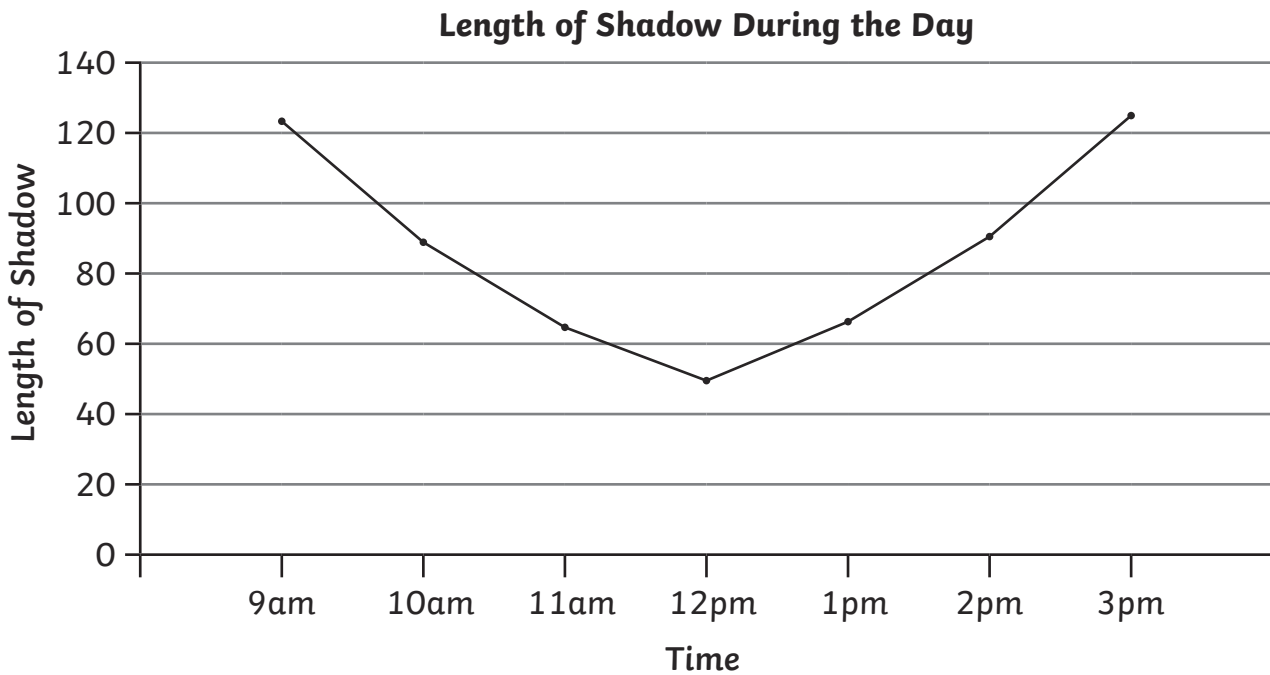
a. Between which times was the largest change in the length of the shadow?

b. Estimate the length of the shadow at 10.30am.

2 marks

5. Draw a one line parallel to the given line AB. Then draw a separate line perpendicular to the given line AB.

A ——————————————— B

2 marks

total for this page

6. **Write a number to complete this number sentence:**

246 809 < ⬚ < 246 813

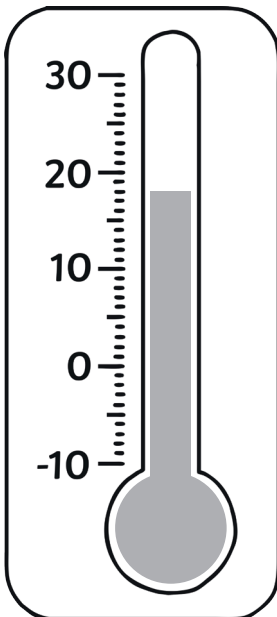1 mark

7. a. What is the time shown on this clock.

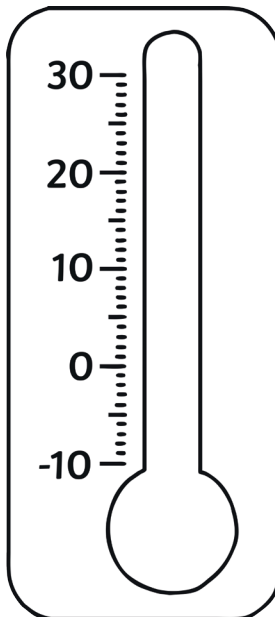b. Which year is represented by these Roman Numerals?

MCMXCIV

2 marks

8. Here are two thermometers. One shows the temperature inside, the other shows the temperature outside. Draw the temperature on the outside thermometer when the temperature outside is 23°C lower than the temperature inside.

inside   outside

1 mark

total for this page

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9. Amy makes a drink by mixing two 750ml bottles of lemonade and a litre carton of juice. The drink is shared equally into four jugs. How much drink will each jug contain?
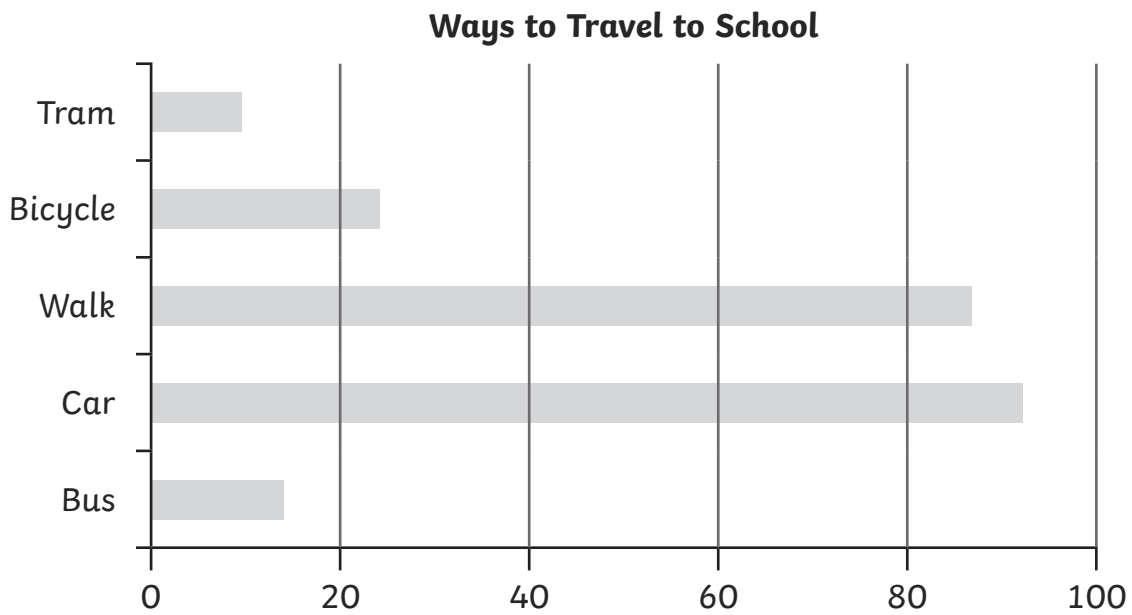
2 marks

total for this page

10. Some children research how children travel to school. They record their results in a bar chart.
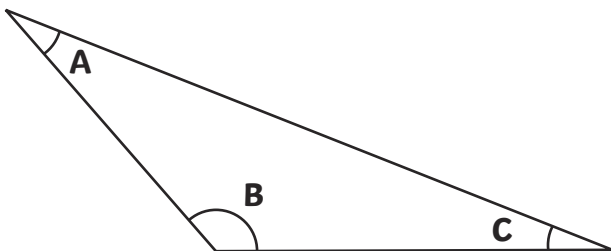
Ways to Travel to School

Julia argues that more than half of the children came to school by car. Explain why she is incorrect.

_____

_____

_____

2 marks

11. Identify all the acute and obtuse angles in this triangle.

Acute: [　　　　　]

Obtuse: [　　　　　]

1 mark

total for
this page

12. A teacher buys 36 sets of colouring pencils for the class. A pack of three sets of colouring pencils cost £2.75. How much will 36 sets cost?

2 marks

13. Order these fractions from smallest to largest.

$\frac{5}{8}$ $\frac{13}{16}$ $\frac{3}{4}$ $\frac{7}{8}$ $\frac{11}{16}$
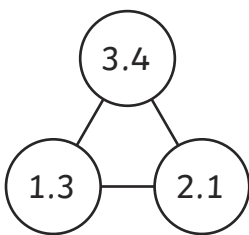
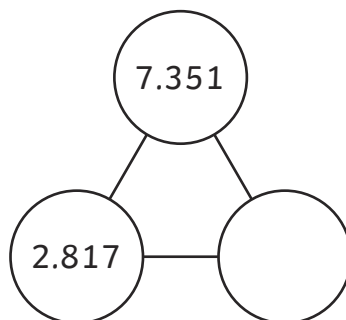|				

smallest   largest

2 marks

14. In these diagrams, the number in the top circle is the sum of the numbers in the bottom two circles. The first diagram is an example.

3.4

1.3   2.1

Complete these:

3.08   4.97

7.351

2.817
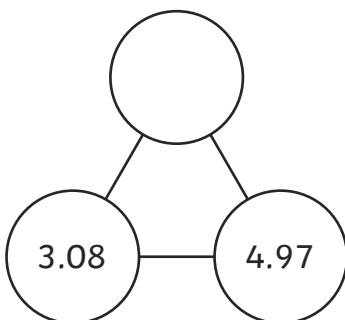
2 marks

total for this page

15. **Reflect this shape about the horizontal line AB.**

A   B

1 mark

16. **Alexa wants to buy €300 for her holiday. The exchange rate is £1 buys €1.20. How much will €300 cost Alexa?**

2 marks

total for this page

17. Place the following numbers correctly in this Carroll diagram:

1, 2, 3, 4, 5, 6, 7, 8, 9

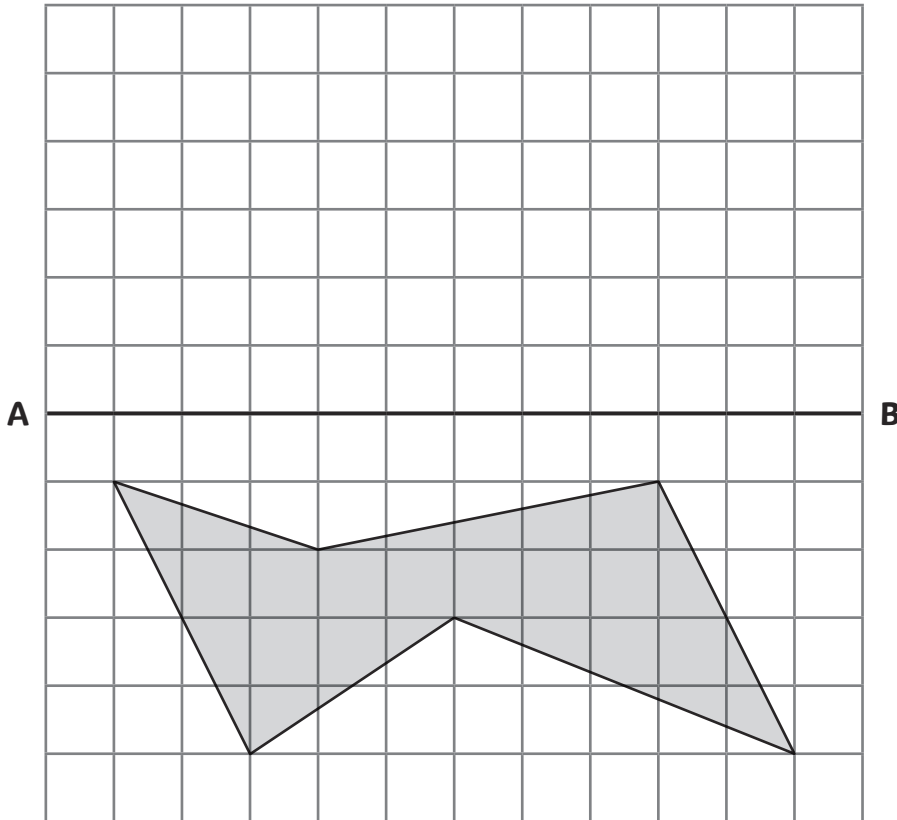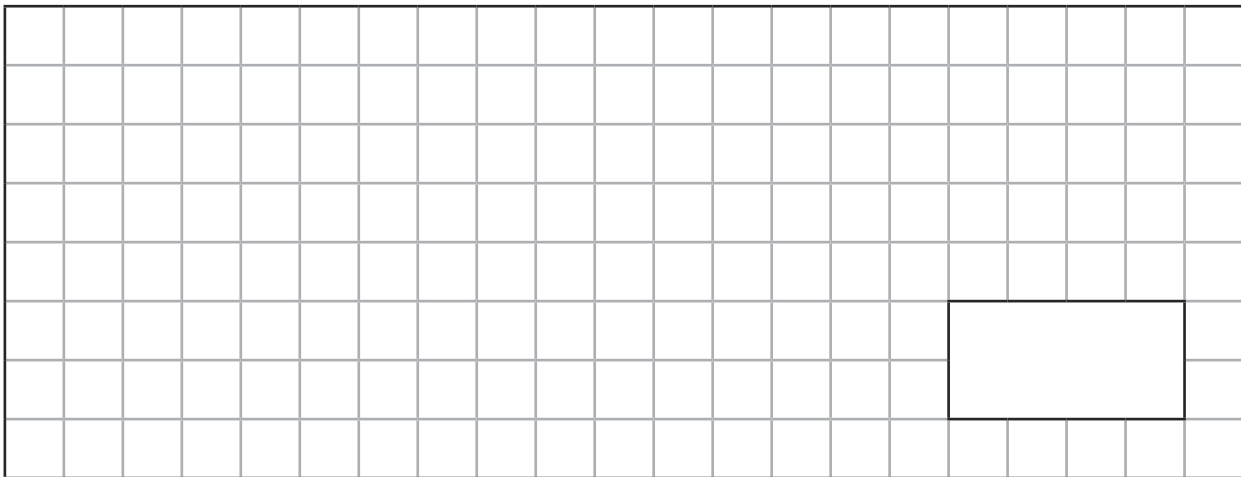|	Prime Number	Not a Prime Number
Square Number		
Not a Square number		

2 marks

18. There are 140 children in a school. 35% of the children eat a packed lunch. The rest eat the school dinner. How many children eat the school dinner?
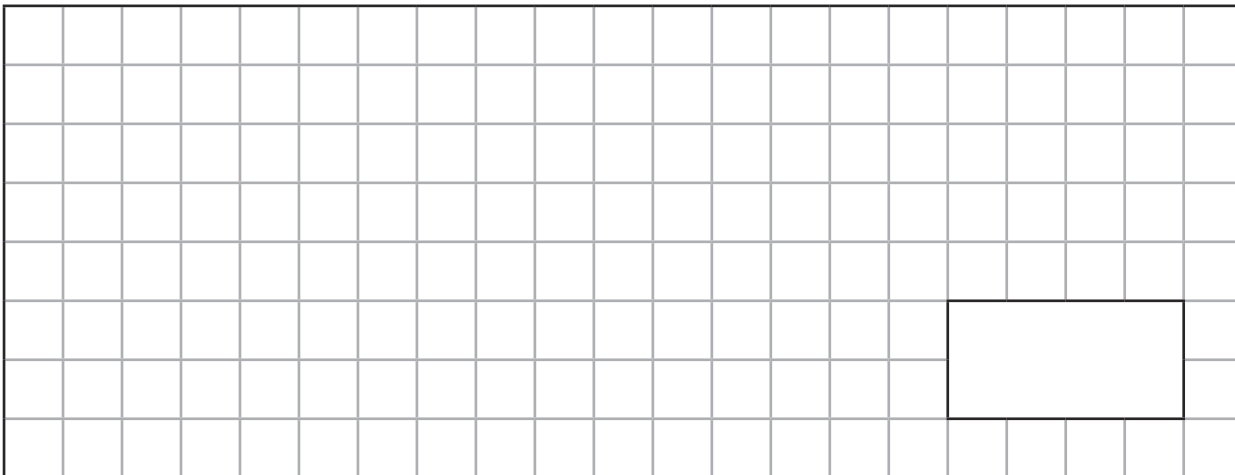
2 marks

19. Hamda goes to a shop to buy two books and a newspaper.
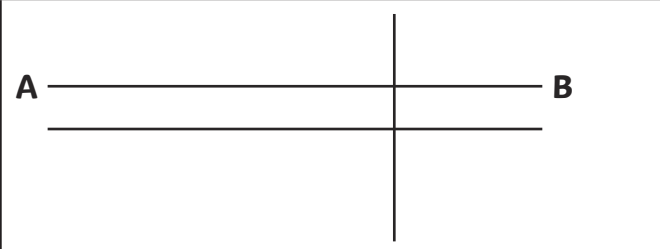
£3.99   £3.99   £1.75
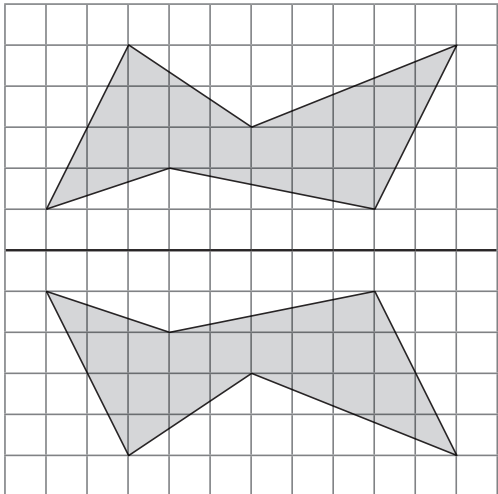
Hamda pays with a £10 note.

With what coins could Hamda be given his change?

2 marks

total for
this page

20. A builder needs to buy 100kg of sand. At the builder's merchant, sand is sold in 10kg and 25kg bags. Both are offered at a discount.

10kg

90p

20% off
marked price

25kg

£2

15% off
marked price

Explain why buying the sand in 25kg bags is the cheapest way to buy 100kg of sand?

2 marks

total for this page

✱✱END OF TEST✱✱

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Question	Answer	Marks	Notes
1. Complete these linear sequences.			
a	48, 64, 72, 88 1050, 950, 900, 800	2	1 mark for all four correct in each sequence.
2. Divide three thousand, two hundred and sixty-four by six.			
	544	1	
3. Calculate the difference in length between these two lines.			
	13.8 – 8.2 = 5.6	2	
4. Some children placed a piece of wood vertically in the playground. They measured the length of the shadow thrown by the stick on each hour during the school day. They drew a graph of the results.			
a	Between 2pm and 3pm	1	Allow 9am – 10am
b	Between 76cm and 78cm inclusive	1	
5. Draw a one line parallel to the given line AB. Then draw a separate line perpendicular to the given line AB.			
		2	1 mark for each correct line. Lines need to be long enough to show correct orientation. Allow small margin or error as long as intention is clear, so they need to be parallel and perpendicular to the naked eye.
6. Write a number to complete this number sentence:			
	246 810, 246 811 or 246 812	1	There must be a comma or space between the 6 and 8
7. What is the time shown on this clock.			
a	5.50, 0550, 1750, or ten minutes to 6	1	1 mark for any correct representation of the time.
b	1994	1	1 mark
8. Here are two thermometers. One shows the temperature inside, the other shows the temperature outside. Draw the temperature on the outside thermometer when the temperature outside is 230C lower than the temperature inside.			
	–5 °C drawn on outside thermometer	1	1 mark as long as intention is clear no matter how the temperature is indicated.
9. Amy makes a drink by mixing two 750ml bottles of lemonade and a litre carton of juice. The drink is shared equally into four jugs. How much drink will each jug contain?			
	625ml or 0.625l	2	2 marks for the correct answer. 1 mark for correct method with only one error in calculation.

Question	Answer	Marks	Notes
10. Some children research how children travel to school. They record their results in a bar chart.			
	Various answers are possible. The children need to explain that 92 is less than half of the total number of children 226. Another way to do this is to explain that 87 + 24 (or any other number represented by a single bar) is more than 92 so the 92 is less than half.	2	2 marks for a satisfactory explanation. 1 mark for correctly reading 92 and a total of 226 if the line that 92 is less than half is not made.
11. Identify all the acute and obtuse angles in this triangle.			
	Acute **A, C** Obtuse **B**	1	1 mark for all 3 correct
12. A teacher buys 36 sets of colouring pencils for the class. A pack of three sets of colouring pencils cost £2.75. How much will 36 sets cost?			
	£33	2	2 marks for correct answer 1 mark for correct calculations with one mistake in calculating £2.75 × (36 ÷ 3)
13. Order these fractions from smallest to largest.			
	$\dfrac{5}{8}$ $\dfrac{11}{16}$ $\dfrac{3}{4}$ $\dfrac{13}{16}$ $\dfrac{7}{8}$	2	2 marks for all correct 1 mark if there is one error
14. In these diagrams, the number in the top circle is the sum of the numbers in the bottom two circles. The first diagram is an example.			
	8.05 4.534	2	1 mark for each correct answer
15. Reflect this shape about the horizontal line AB.			
		1	

Question	Answer	Marks	Notes
16. Alexa wants to buy €300 for her holiday. The exchange rate is £1 buys €1.20. How much will €300 cost Alexa?			
	£250	2	2 marks for correct answer 1 mark for a correct method with only one mistake in calculation: 300 ÷ 1.2 = 250 or £100 buys €120 £100 buys €120 £50 buys €60 so £250 buys €300
17. Place the following numbers correctly in this Carroll diagram:			
	<table><tr><td></td><td>Prime Number</td><td>Not a Prime Number</td></tr><tr><td>Square Number</td><td></td><td>1, 4, 9</td></tr><tr><td>Not a Square number</td><td>2, 3, 5, 7</td><td>6, 8</td></tr></table>	2	2 marks for all correct 1 mark for six to eight correct
18. There are 140 children in a school. 35% of the children eat a packed lunch. The rest eat the school dinner. How many children eat the school dinner?			
	91 children	2	2 marks for correct answer 1 mark for calculating 65% of 140 incorrectly.
19. Hamda goes to a shop to buy two books and a newspaper.			
	Coins to the value of 27p, e.g. 20p, 5p, 2p; 10p, 10p, 5p,2p	2	2 marks for correct answer 1 mark for writing 27p with no coins 1 mark for correct method with one mistake in calculation, where coins to incorrect answer are given correctly.
20. A builder needs to buy 100kg of sand. At the builder's merchant, sand is sold in 10kg and 25kg bags. Both are offered at a discount.			
	25kg × 4 = 100kg, costing £2 × 4 = £8 less 15% (£1.20) = £6.80 10kg × 10 = 100kg, costing 90p × 10 = £9 less 20% (£1.80) = £7.20	2	2 marks for an answer showing that the cost of the four 25kg bags is £6.80 and the ten 10kg bags is £7.20 1 mark for an explanation using a correct method but one mistake in the calculating.