



BROAD HORIZON
— T U I T I O N —

11+ Tuition

Year 5

Core Skills Evaluation

Based on Year 4 Content from the Free Extra Online Lessons

ANSWERS

Overview of Your Scores		
	Your Score	%
Maths \times/\div by 10, 100 and 1000	/ 4 marks	
BIDMAS	/ 2 marks	
Rounding	/ 6 marks	
Column Multiplication	/ 3 marks	
Mean, Mode, Median & Range	/ 8 marks	
Elapsed Time	/ 3 marks	
Perimeter and Area	/ 6 marks	
Volume	/ 3 marks	
Surface Area	/ 3 marks	
Adding and Subtracting Fractions	/ 8 marks	
Fractions of Numbers	/ 5 marks	
Percentage of Numbers	/ 6 marks	
Highest Common Factors	/ 3 marks	
Lowest Common Multiples	/ 2 marks	
Fraction, Decimal and Percentages	/ 12 marks	
Conversion Rates	/ 18 marks	
Algebra	/ 10 marks	
Probability	/ 8 marks	
Solving Money Problems	/ 4 marks	
Percentage increase/decrease	/ 5 marks	
Ratio	/ 8 marks	
Angles	/ 4 marks	
Comprehension	/ 28 Marks	
Verbal Reasoning - GL Techniques	/ 100 Marks	
Non-Verbal	/ 17 Marks	

Maths	/131	%
Comprehension	/28	%
Verbal Reasoning	/100	%
Non-Verbal	/17	%
Total	<u>/276</u>	<u>%</u>

Maths

Multiplying numbers by 10, 100 and 100

$$1) 7.54 \times 10 = 75.4$$

$$2) 254 \div 1000 = 0.254$$

$$3) 0.012 \times 100 = 1.2$$

$$4) 2 \div 100 = 0.02$$

BIDMAS – Order of operations

$$1) (12 \times 5 + 3^2) + 3 = 72$$

$$2) (9 \times 3 + 5^2) + 2 = 54$$

Round each number to the nearest 10 and 100

Club	Average attendance	Rounded to 1 000	Rounded to 10 000
Manchester United	73 452	73,000	70,000
Arsenal	60 079	60,000	60,000
Newcastle United	50 517	51,000	50,000

Column Multiplication

$$\begin{array}{r} 1281 \\ \times 89 \\ \hline 114,009 \end{array}$$

$$\begin{array}{r} 1843 \\ \times 86 \\ \hline 158,498 \end{array}$$

$$\begin{array}{r} 1694 \\ \times 18 \\ \hline 30,492 \end{array}$$

Mean, mode, median and range

1) 3, 8, 2, 3

Mean 4 Median 3 Mode 3 Range 6

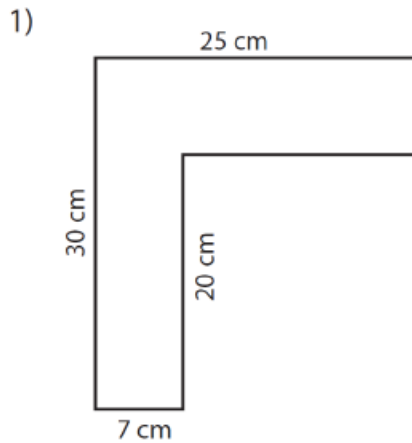
2) 7, 9, 7, 9

Mean 8 Median 8 Mode 7 & 9 Range 2Find the elapsed time

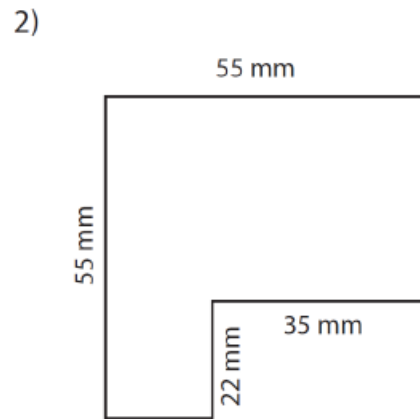
(How much time has gone by between the start time and the end time)

Q.No	Start Time	End Time	Elapsed Time
1)	6:40 A.M.	9:55 A.M.	3 hours 15 minutes
2)	8:55 P.M.	11:25 P.M.	2 hours 30 minutes
3)	1:40 A.M.	9:30 A.M.	7 hours 50 minutes

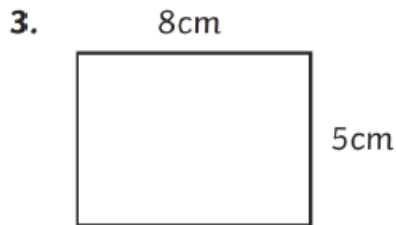
Find the missing lengths and then workout the perimeter and area



Q1) Perimeter = 110cm

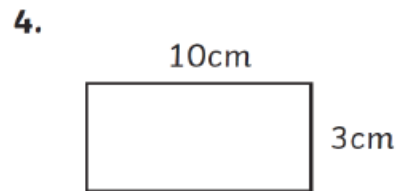


Q2) Perimeter = 220cm



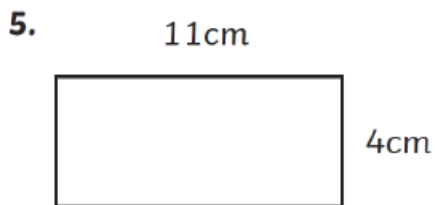
Q3) Perimeter = 26cm

Q3) Area = 40cm sq



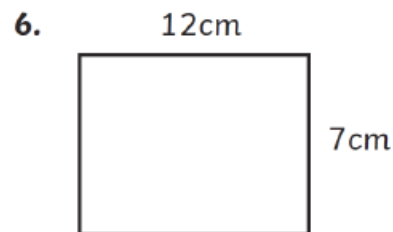
Q4) Perimeter = 26cm

Q4) Area = 30cm sq



Q5) Perimeter = 30cm

Q5) Area = 44cm sq



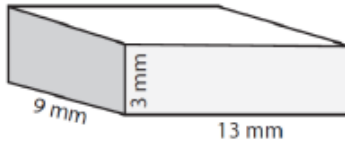
Q6) Perimeter = 38cm

Q6) Area = 84cm sq

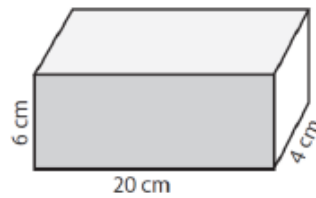
(10)

Find the volume of each of the cuboids below

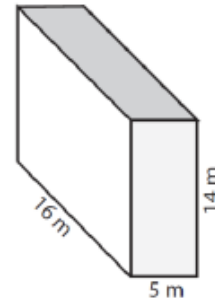
1)



2)



3)



Q1) Volume = 351cm cubed

Q2) Volume = 480cm cubed

Q3) Volume = 1120cm cubed

(3)

Now work out the surface area of the above shapes.

1) Surface area of shape 1 = **366cm sq**

2) Surface area of shape 2 = **448cm sq**

3) Surface area of shape 3 = **748cm sq**

(3)

Adding Fractions

Remember to simplify!

One mark is for a correct answer and an extra mark if simplified correctly!

1) $\frac{6}{10} + \frac{2}{4} =$ 22/20 = 11/10 = 1 and 1/10

***Use the dash to write your fraction. E.g. 2/5**

2) $\frac{5}{10} + \frac{1}{4} =$ **15/20 = 3/4**

3) $\frac{1}{3} + \frac{2}{5} =$ **11/15**

(5)

Subtracting Fractions

$$4) \quad \frac{1}{2} - \frac{1}{3} = \quad 1/6$$

$$5) \quad \frac{3}{4} - \frac{6}{10} = \quad 3/20$$

$$6) \quad \frac{9}{10} - \frac{3}{5} = \quad 3/10$$

Fractions of numbers

$$1) \text{ Find } \frac{4}{8} \text{ of } 224 = \quad 112$$

$$2) \text{ Find } \frac{3}{4} \text{ of } 36 = \quad 27$$

$$3) \text{ Find } \frac{1}{5} \text{ of } 20 = \quad 4$$

$$4) \text{ Find } \frac{2}{3} \text{ of } 48 = \quad 32$$

$$5) \text{ Find } \frac{6}{10} \text{ of } 300 = \quad 180$$

Percentages of numbers

- 1) Find 10% of 240 = 24
- 2) Find 35% of 70 = 24.5
- 3) Find 20% of 150 = 30
- 4) Find 85% of 400 = 340
- 5) Find 6% of 20 = 1.2
- 6) Find 27% of 35 = 9.45

Find the highest common factor of the following;

1. 48 and 36 = 12
2. 56 and 42 = 7
3. 35 and 50 = 5

Find the lowest common multiple of the following;

1. 8 and 3 = 24
2. 6 and 5 = 30

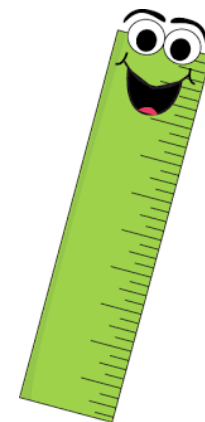
Fraction, Decimal & Percentages Conversions

Fill in the missing boxes

Fraction	Decimal	Percentage
1	1	100%
$\frac{1}{2}$	0.5	50%
$\frac{1}{3}$	0.333	33%
$\frac{1}{4}$	0.25	25%
$\frac{1}{5}$	0.2	20%
$\frac{1}{6}$	0.166	16.6%
$\frac{1}{7}$	0.142	14.2%
$\frac{1}{8}$	0.125	12.5%
$\frac{1}{9}$	0.111	11.1%
$\frac{1}{10}$	0.1	10%
$\frac{1}{20}$	0.05	5%

Conversion Rates

		Your Answer
Time		
1)	1 hour =	60 minutes
2)	24 hours =	1 day
3)	1 week =	7 days
4)	1 fortnight =	2 weeks / 14 days
5)	1 year =	52 weeks
6)	365 days =	1 year
7)	1 decade =	10 years
8)	1 century =	100 years
9)	1 millennium =	1000 years
Weight		
10)	1 tonne =	1000 kg
11)	1 kilogram =	1000 grams
Length		
12)	1 centimetre =	10mm
13)	1 metre =	100cm
14)	1 kilometre =	1000 metres
15)	8 kilometres ≈	5 miles
16)	1 foot =	12 inches
Capacity / Volume		
17)	1 litre =	1000 ml
18)	1 centilitre =	10 ml



Algebra

n	$4n + 17$
5	37
10	57
15	77
8	49
12	65
6	41
0	17

2. If $A = 3$, $B = 4$ and $C = 1$, Find the value of the following:

a. $4A - 3C = 9$

b. $2(3B + C) = 26$

c. $5A - 2B + 3C - 1B = 6$

Probability

6. A bag contains 16 green marbles, 4 red marbles and 6 orange marbles. One marble is selected at random.
- What is the probability it is orange? $\frac{3}{13}$
 - What is the probability the marble is red? $\frac{2}{13}$
 - What is the probability the marble is green? $\frac{8}{13}$
7. At Heathfield Primary School there are 300 boys and 450 girls. What is the probability of selecting a boy at random? $\frac{2}{5}$
8. A pack of playing cards has 52 cards.
- What is the probability of selecting a hearts? $\frac{1}{4}$
 - What is the probability of selecting a Queen? $\frac{1}{13}$
 - What is the probability of selecting the six of spades? $\frac{1}{52}$
9. A spinner has numbers from 1 to 20 on it. If it is spun, what is the chance of getting a number which is a multiple of three? $\frac{3}{10}$

Solving Money Problems

1. What is the total of £33.50, £78.70 and £1.58? **£113.78**
2. What is the total cost of a T.V costing £457.50, two speakers costing £34.20 each and a CD costing £2.90? **£528.80**
3. If ten dictionaries cost £75.60, how much does one cost? **£7.56**
4. Simon bought five books. Altogether they cost £12.50.
What was the cost of one book? **£2.50**

Answers Percentage increase and decrease

- 1) **648**
- 2) **925**
- 3) **162**
- 4) **£1.00**
- 5) **2 hours**

Ratio

1. Ali has invited 12 friends round for supper. He is cooking curry and rice. He needs 150g of uncooked rice per person. How many grams of rice does he need? Don't forget - Ali will be eating too!

1950 g

2. Steffi is painting her house. She has calculated she needs 40 litres of paint in total. She has decided to mix pink paint. She will need 3 litres of white for every 2 litres of red. How many litres of each colour will she need to buy?

24L white and 16L red

3. In a pack of balloons, there are 3 different colours: red, blue and green. The ratio is 5:2:1 (red: blue: green). If there are 8 blue balloons in the pack, how many balloons are there in total?

32 balloons

4. Susie is saving for a new pair of trainers. Every week she saves £5 of her pocket money and her mum gives her £3. If the trainers cost £56, how many weeks will it take her to have enough money to buy them? How much money will she have saved and how much will her mum have given?

7 weeks
Saved £35
Mom £21

5. At a party there are three sorts of drinks: orange, lemonade and cherry. The ratio of the drinks is 3:2:1 (orange:lemonade:cherry). If there are 12 glasses of orange, how many glasses of drink are there altogether?

24 glasses

6. Class 6 do a survey to find out which sport children like best. For every child who said they like rounders, there were three children who liked football and two who said they like swimming best. There were 20 children who said they liked swimming. How many children took part in the survey?

60 children

7. A printing press prints 120 sheets in 3 minutes. How many sheets are printed in 30 minutes?

1200 sheets

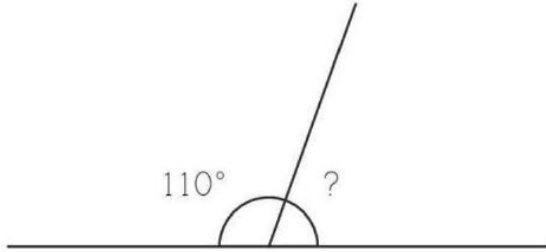
8. Farmer Giles and Farmer Jones have chickens. Farmer Giles' chickens lay 2 brown eggs for every 5 white eggs. Farmer Jones' chickens lay 3 brown egg for every 4 white eggs. On Monday Farmer Giles' chickens laid 35 eggs and Farmer Jones' chickens laid 28 eggs. Which farmer's chickens laid more brown eggs?

Farmer Jones

Angles

Calculate the missing angles

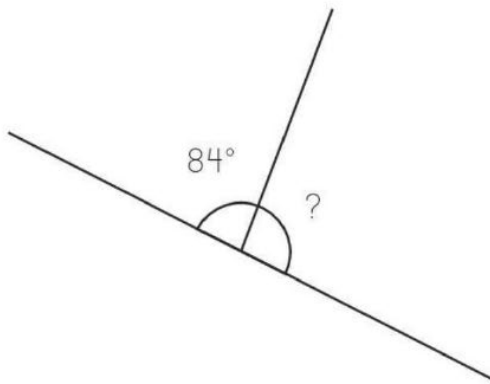
1.



The missing angle is:

70

2.



The missing angle is:

96

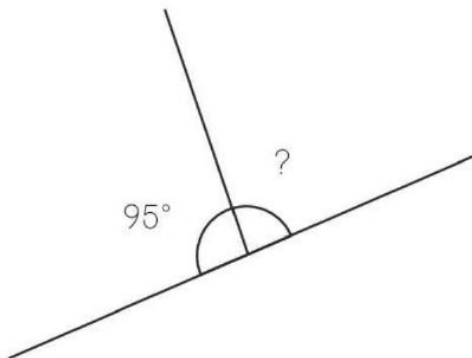
3.



The missing angle is:

163

4.



The missing angle is:

85

English Comprehension

1. **D** — *In the passage it says that there have been "attacks on livestock."*
2. **B** — *The passage says that "anxious" people have reported sightings — "anxious" is closest in meaning to 'concerned'.*
3. **C** — *The passage says that the reports are often regarded as "hoaxes, mistakes or fantasies" and the article also tells us that many people believe the reports to be real. So, the only option not given as a reason is that the sightings are dreams.*
4. **E** — *The passage says that "An increasing number of people believe there are too many witnesses for the rumours to be unfounded."*
5. **E** — *The passage says "some areas produce more reports of mysterious creatures than others, leading to local legends such as Cornwall's famous Beast of Bodmin". This suggests that there have been many sightings of strange animals in Cornwall.*
6. **A** — *In the passage it says that farmers "know the countryside well".*
7. **C** — *The passage says that people "were no longer permitted to keep" big cats.*
8. **C** — *The word "rage" suggests that people feel strongly about them.*
9. **B** — *"rural" is closest in meaning to 'rustic'. It means 'in the countryside'.*
10. **D** — *"mysterious" is closest in meaning to 'inexplicable'. It means that people can't explain the cause of these sightings.*
11. **B** — *"exotic" is closest in meaning to 'foreign'. It means that big cats are not native to the United Kingdom.*
12. **A** — *"United Kingdom" is a proper noun because it is the name of a particular place. Proper nouns always begin with a capital letter.*
13. **A** — *The article is biased — it provides more evidence that the sightings are true.*
14. **B** — *"wild" is an adjective. It describes a noun.*

Non-Verbal Reasoning

ASSESSMENT TEST 8

Section 1 — Reflect the Figure

1. C

Option A is a 90 degree anticlockwise rotation.
Option B is a downwards reflection. In option D, the black shape has become white.

2. D

Option A is the wrong shape. Option B is a downwards reflection. Option C is a 180 degree rotation.

3. B

Option A is a downwards reflection. Option C is a rotation (and the stripes have changed). Option D is a reflection but the black and grey shading has swapped.

4. C

In option A, the triangles are reflected but the parallel lines are positioned incorrectly. Options B and D are the wrong shape.

Section 2 — Complete the Square Grid

1. B

Working from left to right, just the top shape is shaded grey, then both shapes are shaded grey, and then just the bottom shape is shaded grey.

2. B

The shapes in each column are the same and the positions of the lines through the shapes stay the same in each row.

3. E

Each figure only appears once in each row and column.

Section 3 — Cubes and Nets

1. B

Option A is ruled out because the face with the black triangle and the face with the white triangle must be on opposite sides. Option C is ruled out because the net doesn't have a face with a five-sided shape on it. Option D is ruled out because the net doesn't have a face with a black square on it.

2. D

Option A is ruled out because the net doesn't have a face with a black triangle on it. Option B is ruled out because the face with the hexagon and the face with the black stripe must be on opposite sides. Option C is ruled out because the net doesn't have a face with a black circle on it.

3. C

Option A is ruled out because the face with the grey square and the face with the parallel lines must be on opposite sides. Option B is ruled out because the net doesn't have a face with a 'Z' on it. Option D is ruled out because the net doesn't have a face with double parallel lines crossing in the centre on it.

Section 4 — Complete the Pair

1. B

The small shape becomes hatched, while the large shape becomes white.

2. B

The shape becomes a star with the same number of points as the shape had corners. The corners are marked with black circles which stay in the same position.

3. C

The figure is reflected and the shading of the shape changes from white to grey or grey to white.

Section 5 — Changing Bugs

1. D

The bug's body rotates 180 degrees.

2. B

Each different shading on the bug's body moves down one segment. (When a shading reaches the bottom, it starts again from the top.)

3. B

The shape of the bug's body becomes the shape of the bug's head and the shape of the bug's head becomes the shape of the bug's body.

4. C

The bug gains an extra pair of legs. The grey segments become white and the white segments become grey.