BROAD HORIZON
TUITION CENTRE

11+ Tuition – Year 5

Week 18 - Online

Answers

Percentage increase

Name ANS

Question	Number	10%	20%	5%
1.	240	24	48	12
2.	520	52	104	26
3.	2600	260	520	130
4.	780	78	156	39
5.	60	6	12	3
6.	90	9	18	4.5
7.	25	2.5	5	1.25

1. Find 240 increased by 10%

   10% of 240 = 24

   240 + 24 = 264

2. Find 780 increased by 10%

   10% of 780 = 78

   780 + 78 = 858

3. Find 90 increased by 10%

   10% of 90 = 9

   90 + 9 = 99

4. Find 520 increased by 10%

   10% of 520 = 52

   520 + 52 = 572

5. Find 240 increased by 20%

   20% of 240 = 48

   240 + 48 = 288

6. Find 60 increased by 20%

   20% of 60 = 12

   ~~240~~ 60 + 12 = 72

7. Find 2600 increased by 5%

   5% of 2600 = 130

   2600 + 130 = 2730

8. Find 25 increased by 5%

   5% of 25 = 1.25

   25 + 1.25 = 26.25

Now try these without the help from your table:

9. Find 220 increased by 20%

10% of 220 = 22

20% of 220 = 44

220 + 44 = 264

10. Find 840 increased by 20%

10% of 840 = 84

20% of 840 = 168

840 + 168 = 1008

11. Find 65 increased by 20%

10% of 65 = 6.5

20% of 65 = 13

65 + 13 = 78

12. Find 130 increased by 20%

20% of 130 = 26

130 + 26 = 156

13. Find 360 increased by 5%

10% of 360 = 36

5% of 360 = 18

360 + 18 = 378

Try some other percentages:

14. Find 820 increased by 30%

10% of 820 = 82

30% of 820 = 246

820 + 246 = 1066

15. Find 210 increased by 40%

10% of 210 = 21

40% of 210 = 84

210 + 84 = 294

16. Find 660 increased by 15%

10% of 660 = 66

5% of 660 = 33

660 + 66 + 33 = 759

17. Find 180 increased by 3%

1% of 180 = 1.8

3% of 180 = 5.4

180 + 5.4 = 185.4

18. Find 4000 increased by 6%

6% of 4000 = 240

4000 + 240 = 4240

Section 4

To decrease a number by 10%, find 10% and subtract this from the number.

Decrease 80 by 10%.

									10%
									8

10% of 80 = 8 80 - 8 = 72 80 decreased by 10% = 72

Decrease the following numbers by 10%.

140

									14

10% of 140 = 14 **140 - 14 = 126** **140 decreased by 10% = 126**

60

									6

10% of 60 = 14 **60 - 6 = 54** **60 decreased by 10% = 54**

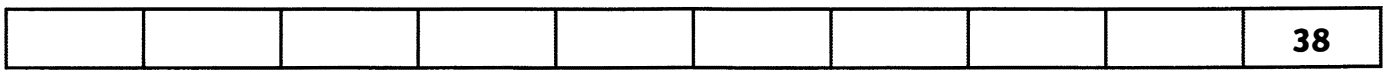
150

10% of 150 = 15 **150 - 15 = 135** **150 decreased by 10% = 135**

230

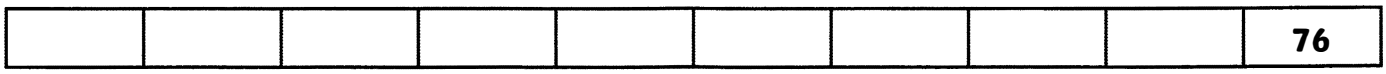
10% of 230 = 23 **230 - 23 = 207** **230 decreased by 10% = 207**

380



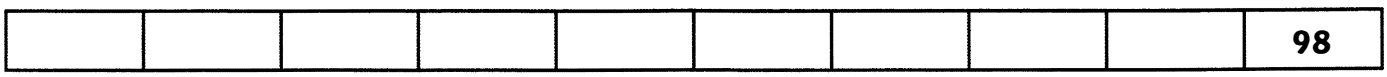
10% of 380 = 38 **380 - 38 = 342** **380 decreased by 10% = 342**

760



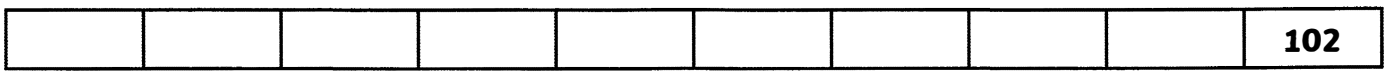
10% of 760 = 76 **760 - 76 = 684** **760 decreased by 10% = 684**

980



10% of 980 = 98 **980 - 98 = 882** **980 decreased by 10% = 882**

1020



10% of 1020 = 102 **1020 - 102 = 918** **1020 decreased by 10% = 918**

Section 6

1. A bag of popcorn costs £1.20. A shop discounts bags of popcorn by 10%. What is the new cost?

£1.08

2. An athlete's best time for running 400m is 50 seconds. After a year's training the athlete cuts their time by 10%. What is their new best time?

45 seconds

3. A grocer normally buys 670kg of potatoes each week. One week he decides to buy 10% less potatoes. What mass of potatoes does he buy?

603kg

4. A school raises £420 for their chosen charity. In the previous year, the school raised 10% less. How much did the school raise the previous year?

£378

5. A shop has to increase the cost of a set of books by 10%. The original price was £25. What is the new price?

£27.50

6. A football team has an average attendance of 5680 in one season. The following season their average attendance increases by 10%. What is the new average attendance?

6248

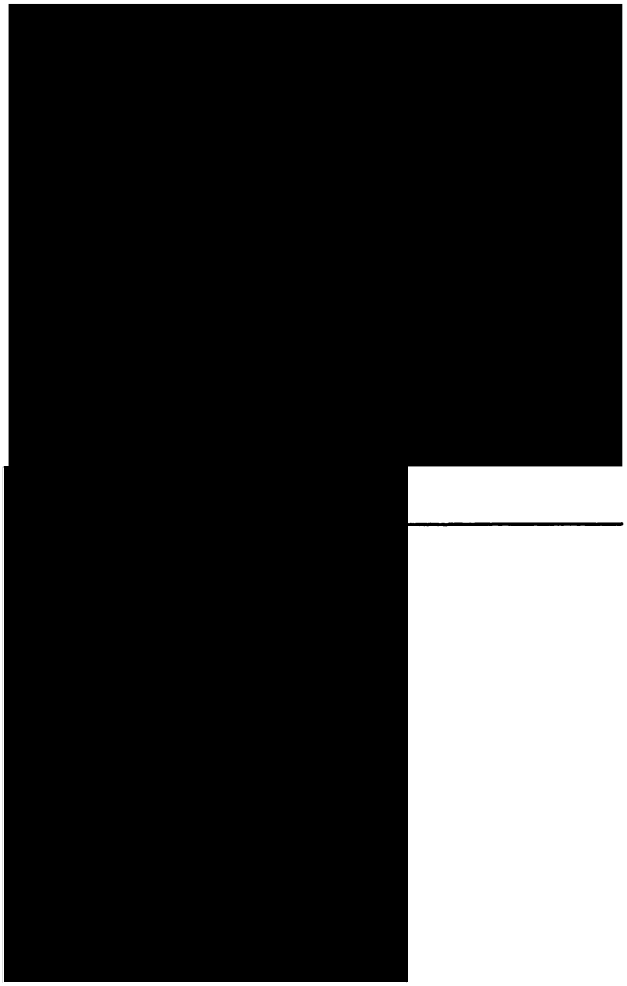
7. A runner is training for a marathon. One week she runs 44 miles over the whole week. In each of the next two weeks, she increases the distance she runs by 10%. How far will she have run in the second week? Round the answer to one decimal place.

53.24 miles rounded to 53.2 miles

Answer Sheet: Maths Assessment Year 6: Algebra

<table>
<tr><th>question</th><th>answer</th><th>marks</th><th>notes</th></tr>
<tr><td colspan="4">1. Use simple formulae.</td></tr>
<tr><td>a</td><td><table><tr><td>3a = 12</td><td>a = 4</td></tr><tr><td>30 = 5b</td><td>b = 6</td></tr><tr><td>8c = 72</td><td>c = 9</td></tr><tr><td>48 = 12d</td><td>d = 4</td></tr></table></td><td>4</td><td>Award one mark for each answer.</td></tr>
<tr><td>b</td><td><table><tr><td>20 = 4h + 4</td><td>h = 4</td></tr><tr><td>3i + 5 = 11</td><td>i = 2</td></tr><tr><td>14 = 6j - 4</td><td>j = 3</td></tr><tr><td>2k – 5 = 5</td><td>k = 5</td></tr></table></td><td>4</td><td>Award one mark for each answer.</td></tr>
<tr><td>c</td><td><table><tr><td>△ = 3a</td><td>△ = 21</td></tr><tr><td>4 + a =</td><td>⬠ = 11</td></tr><tr><td>◇ = 10 - a</td><td>◇ = 3</td></tr><tr><td>a + a =</td><td>□ = 14</td></tr></table></td><td>4</td><td>Award one mark for each answer.</td></tr>
<tr><td colspan="4">2. Generate and describe linear number sequences.</td></tr>
<tr><td>a</td><td>39 47 55 63 71</td><td>1</td><td></td></tr>
<tr><td>b</td><td>26</td><td>1</td><td></td></tr>
<tr><td>c</td><td>22 38 54 70</td><td>1</td><td></td></tr>
<tr><td>d</td><td><table><tr><td>Term</td><td>Calculation</td><td>Value</td></tr><tr><td>1st</td><td>5 x 1 + 1</td><td>6</td></tr><tr><td>5th</td><td>5 x 5 + 1</td><td>26</td></tr><tr><td>10th</td><td>5 x 10 + 1</td><td>51</td></tr><tr><td>20th</td><td>5 x 20 + 1</td><td>101</td></tr></table></td><td>4</td><td>Award one mark for each box correctly completed.</td></tr>
<tr><td>e</td><td><table><tr><td>(3 x 4 – 1)</td><td>3 x 5 - 1</td><td>3 x 4 + 1</td></tr></table></td><td>1</td><td></td></tr>
<tr><td>f</td><td>10n + 2 = 92</td><td>2</td><td>Award two marks for the formula correctly identified.
Award one mark for a correct answer, but no formula.</td></tr>
<tr><td colspan="4">3. Express missing number problems algebraically.</td></tr>
<tr><td>a</td><td><table><tr><td>9h - 16</td><td>16h + 9</td><td>(9h + 16)</td></tr></table></td><td>1</td><td></td></tr>
<tr><td>b</td><td>When Emily is 11, Becky will be 15
When Becky is 17, Emily will be 13</td><td>2</td><td>Award one mark for each correct answer.</td></tr>
<tr><td>c</td><td>(l+w) x 2 or 2l+2w</td><td>1</td><td></td></tr>
</table>

question	answer	marks	notes
d	The cost of tiling a floor where the area is 10 square metres would be **£60**	1	Award one mark for each correct answer.
	The area of a floor where the tiles cost £110 would be **20 square metres**	2	Award one mark if it is clear that the calculation (110 - 10) ÷ 5 has been used but the answer is wrong.
e	8h – 5 **or** 8 x h – 5 **or** (8h) – 5 **or** (8 x h) - 5	1	



Test 10

Q1 C
The largest faces of the shape are white, which rules out A and D. The smaller faces of the shape are not white, which rules out B.

Q2 D
The curved part of the shape is white, which rules out B and C. Neither circular face is dark grey, which rules out A.

Q3 A
The smaller rectangular faces of the shape are white, which rules out C and D. The larger faces are light grey, which rules out B.

Q4 C
The rectangular faces of the shape are all white, which rules out A, B and D.

Q5 A
The shape has no dark grey triangular sides, which rules out B and C. The shape only has 1 light grey triangular side, which rules out D.

Q6 D
The shape has 1 dark grey face, which rules out A. The shape has no light grey sides, which rules out B and C.

Q7 A
The largest faces of the shape are both white, which rules out B, C and D.

Q8 C
The triangular faces of the shape are dark grey, which rules out A and B. None of the rectangular faces of the shape is dark grey, which rules out D.

Q9 A
The rectangular faces of the shape are all white, which rules out B, C and D.

Q10 D
The shape does not have 2 grey trapezium-shaped sides next to each other, which rules out A and B. The shape does not have 2 white trapezium-shaped sides next to each other, which rules out C.

Test 11

Q1 A

Q2 C

Q3 B

Q4 C

Q5 D

Q6 A

Q7 B

Q8 C

Q9 D

Q10 A

Test 12

Q1 C

Q2 D

Q3 C

Q4 B

Q5 B

Q6 B

Q7 C

Q8 D

Q9 C

Q10 C

TYPE TWENTY-SIX:

22	
24	48
12	8
19	55
36	81
35	38
20	50
200	25
41	34
567	678
16	46
120	3600
1200	
512	
22	21
65	74
185	
37.5	
19	17
8	

TYPE TWENTY-SEVEN:

6204 + 439 + 2009 = 8652
7420 + 207 + 893 = 8520
924 + 6231 + 1625 = 8780
8909 + 99 + 387 = 9395
46 + 2204 + 3008 = 5258
126 + 729 + 2929 = 3784
674 + 2067 + 7246 = 9987
2004 + 3247 + 2584 = 7835
4007 − 2416 = 1591
5200 − 4927 = 0273
3472 − 989 = 2483
6802 − 3027 = 3775
8280 − 5397 = 2883
3047 − 2076 = 0971
5552 − 3479 = 2073
2160 − 1234 = 0926

989	756	256	858
775	385	276	369
256	449	324	232
268	329	259	240