BROAD HORIZON
TUITION

11+ Tuition

Year 5

Week 21
EASTER HOLIDAY PACK 1

ANSWERS

Test 23 — pages 76-78

1. 77743.7 miles

Add the two numbers together — use the column method here:

$$\begin{array}{r} 77322.3 \\ +\ \ 421.4 \\ \hline 77743.7 \end{array}$$

2. 40 cm

There are 10 sides in Tom's shape, and each side is 4 cm long, so the perimeter is $4 \times 10 = 40$ cm.

3. A

Break 312 into chunks: $312 = 300 + 12$.
$300 \div 6 = 50$ and $12 \div 6 = 2$,
so $312 \div 6 = 50 + 2 = 52$.

4. B

$^{428}/_{1000}$ of her aeroplanes are blue. This fraction can be cancelled down by dividing both numbers by 2: $^{214}/_{500}$. Divide again by 2: $^{107}/_{250}$. It won't cancel any further.

5. 10.5 m

Add the distances together and divide by the number of distances. $10 + 3 + 14 + 15 = 42$ m. $42 \div 4 = 10.5$ m (you can use partitioning here).

6. 20 cm

The volume of a cuboid is height × width × length.
The height and width are both 6 cm, so $6 \times 6 = 36$.
The volume of the cuboid is 720,
so the length is $720 \div 36 = 20$ cm.

7. A

37 440 000 can be rounded to 40 000 000, and 720 can be rounded to 1000. So there are approximately $40\,000\,000 \div 1000$ bricks in each shipping container. Cancelling out zeros gives $40\,000 \div 1 = 40\,000$.
The only option close to the approximation is 52 000.

8. 280

10% of 800 is $800 \div 10 = 80$, and 5% is $80 \div 2 = 40$.
There are 7 lots of 5% in 35%, so 35% of 800 is $40 \times 7 = 280$.

9. 55.8 litres

1.8×31 is the same as $1.8 \times 30 + 1.8 \times 1$.
$1.8 \times 3 = 5.4$ (you can use partitioning), so
$1.8 \times 30 = 54$. So $1.8 \times 31 = 54 + 1.8 = 55.8$.

10. 90 days

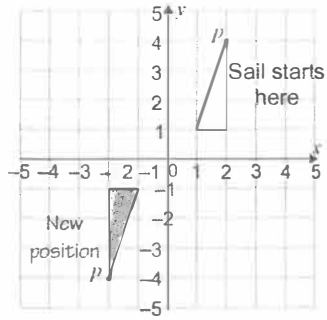
After 100 days, Luke will have made $1.8 \times 100 = 180$ litres of juice. This is too much by $180 - 162 = 18$ litres. It take $18 \div 1.8 = 10$ days to make 18 litres, so it takes $100 - 10 = 90$ days to make 162 litres.

11. Day 7

The percentage changes by the same amount each day. Between the first and second day it changes by $8 - 3 = 5\%$. So add 5% each day. On the fourth day it was $13 + 5 = 18\%$, on the fifth day it was $18 + 5 = 23\%$, on the sixth day it was $23 + 5 = 28\%$, on the seventh day it was $28 + 5 = 33\%$. This is more than 30%, so it was Day 7.

12. B

The rotated sail will look like this:



So the new coordinates of p are $(-2, -4)$.

Puzzles 9 — page 79

Crossnumbersearch

The number that doesn't fit is 41 803.

5	3	6	4			9	4	9	1
7				5	4	7			
6	8	6	9	8		1	6	9	3
4			9			6		1	
3			5			0		2	
7	9	4	8	8	0	3	5	6	7
6			9			2		0	
4	8	6			4	0	0	5	1
			1		7			1	
2	2	0	4	8	4	6	2	7	9
			0		7				1
		6	0	8				3	6

Test 24 — pages 80-82

1. E

$36 \div 4 = 9$, so $36 \div 40 = 9 \div 10 = £0.90$.

2. C

The difference in length is $1 - 0.91 = 0.09$ m.
This is the same as 9 cm.

3. 14

The bar for larch is halfway between 12 and 16, which is 14. So 14 said larch.

4. 14

The most popular tree is oak, which 18 people chose.
The least popular tree is ash, which 4 people chose.
The difference is $18 - 4 = 14$.

5. B

188 is 2 × 94, and the propeller-driven plane flies at half the speed of the jet plane. So in 188 minutes, the propeller-driven planes fly 850 ÷ 2 × 2 = 850 miles.

6. 1100 cm^3

The volume of a prism is the cross-section multiplied by the length. The cross-section is 11 cm^2 and the length is 100 cm, so the volume is 11 × 100 = 1100 cm^3.

7. 88 cm^2

The area of the end face of one arris rail is 11 cm^2, so the area of 8 is 8 × 11 = 88 cm^2.

8. 1500

60 = 3 × 20, so there are twenty times more eggs in 60 egg boxes than in 3 egg boxes.
So the number of eggs in 60 boxes is 20 × 75
= 2 × 75 × 10 = 150 × 10 = 1500 eggs.

9. C

4197.0 km is approximately 4000 km, and 113.4 km is approximately 100 km. It takes 4197.0 ÷ 113.4 hours to complete the test, which is approximately 4000 ÷ 100 = 40 hours.
The only close option is 37.0 hours.

10. £65.00

Each litre covers 10 m^2, so Pete needs to buy 230 ÷ 10 = 23 litres of paint. Paint comes in tins of 5 litres. 4 × 5 = 20, so 4 tins isn't enough paint.
5 × 5 = 25, which is enough, so Pete needs to buy 5 tins.
This costs 5 × 13 = £65 (you can use partitioning here).

11. E

192 breaks into 180 + 12. Each room has a ceiling with area 192 ÷ 3 = 180 ÷ 3 + 12 ÷ 3 = 60 + 4 = 64 m^2.
8 × 8 = 64, so the length of each side of the room is 8 m.

12. 108 minutes

Replace n in the formula with 9:
9(9 + 3) = 9(12) = 9 × 12 = 108 minutes.

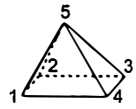
Test 12 — pages 39-41

1. 4 528 936

Four million five hundred and twenty-eight thousand = 4 528 000. Nine hundred and thirty-six = 936, so four million five hundred and twenty-eight thousand nine hundred and thirty-six is written 4 528 936 in figures.

2. 5

A square-based pyramid has 5 vertices, as shown.



3. E

6458 has a 5 in the tens column, ~~so round the~~ hundreds column up to get 6500.

4. 93°

Angles in a triangle add up to 180°, so the size of the third angle is 180 – 87 = 180 – 80 – 7 = 93°.

5. 84 cm²

The area of a parallelogram is its base multiplied by its perpendicular height, so the area is 6 × 14 = 84 cm².

6. A

28 and 77 are both divisible by 7, so $^{28}/_{77} = {}^{(28 \div 7)}/_{(77 \div 7)} = {}^{4}/_{11}$.

7. B

2 m = 200 cm, so the area of the square in cm² is 200 × 200 = 40 000 cm².

8. 32.7 mm

Look at the number in the tens column to find the highest measurement (91.4 mm) and the lowest measurement (58.7 mm). Difference = 91.4 – 58.7. Using partitioning: 91.4 – 0.7 – 8 – 50 = 90.7 – 8 – 50 = 82.7 – 50 = 32.7 mm.

9. 00:16

The time one hour after 22:36 is 23:36. Add the remaining 40 minutes to 23:36 in parts: adding 24 minutes gives 00:00, then adding the remaining 16 minutes gives 00:16.

10. A

Angle *a* is a reflex angle (between 180° and 360°), which rules out D. It is less than 270°, which rules out C and E. It is much closer to 270° than it is to 180° (a straight line), which rules out B. So 250° is the best estimate.

11. 372

10% of 620 = 620 ÷ 10 = 62. 60% of 620 = 62 × 6 = (60 × 6) + (2 × 6) = 360 + 12 = 372.

12. 17

The number of dots in each pattern increases by 4 each time, so the next pattern will contain 13 + 4 = 17 dots.

13. B

10 + 11 + 12 = 33. 10 + 11 × 12 = 142.
10 + 11 – 12 = 9. 10 × 11 – 12 = 98.
10 × 11 + 12 = 122. So 142 (B) is the highest answer.

14. 160 ml

Look at the number in the hundreds column to find the three smallest measurements: 250 ml, 100 ml and 130 ml.
The mean of these measurements is (250 + 100 + 130) ÷ 3 = 480 ÷ 3 = 160 ml (use short division).

15. C

There are 7 square numbers lower than 50:
1, 4, 9, 16, 25, 36 and 49.

16. E

The graph gets steeper as time goes by, showing that the temperature is rising faster and faster. So the greatest increase in temperature happens between 50-60 minutes.

17. 19 cm³

The volume of a cube with sides 2 cm long is 2 × 2 × 2 = 4 × 2 = 8 cm³. The volume of a cube with sides 3 cm long is 3 × 3 × 3 = 9 × 3 = 27 cm³. So the difference in volume is 27 – 8 = 19 cm³.

18. 36

$^{1}/_{3}x - 5 = 7$, so $^{1}/_{3}x$ must be 7 + 5 = 12.
This means that x must be 12 × 3 = 36.

19. C

15 is not even, square or prime, so it is the only number between 1 and 20 which does fit into the diagram.

20. (2, 7)

Point *P* is translated 5 squares up, so the *x*-coordinate stays the same, but the *y*-coordinate increases by 5.
The new coordinates of point *P* are (2, 2 + 5) = (2, 7).

21. 23

Use long division:

```
      23
27 ) 621
   - 54
     81
     81
      0
```

22. B

If 180(*n* – 2) = 540, then *n* – 2 = must be 540 ÷ 180 = 3, and so *n* must be 3 + 2 = 5. So a polygon with angles adding up to 540° has 5 sides.

Answers

1. Alice in Wonderland page 9: questions page 11

Question	Answer	Explanation
1	B	The Duchess says "Here! You may nurse it a bit if you like. I must go and get ready to play croquet with the Queen."
2	A	"Snorting" is an onomatopoeia like a steam engine is a simile.
3	C	Alice felt it would be "quite absurd" to carry it further because it was so obviously a pig.
4	E	"They're sure to kill it in a day or two wouldn't it be murder to leave it behind?" This shows Alice felt she would be held responsible for the baby's death if she didn't take it away.
5	A	The baby held its arm and legs out in all directions just like a stafish.
6	D	Throwing means the same as "flinging".
7	E	The text doesn't say.
8	C	The baby was "neither more nor less than a pig" means it had become a pig.
9	A	Alice is the subject, while the thing is the object.
10	D	Alice wondered if the baby was crying like a human baby. Evidence of tears would have shown her that it was.
11	B	Humerous (1) and Fantasy (4)
12	B	She was relieved that the baby was now a handsome pig rather than an ugly baby.
13	D	The cat was on a bough which is a synonym for branch.
14	E	Alice wasn't sure the cat would appreciate being called "Cheshire Puss".
15	B	handsome means good looking
16	D	Alice said, "Would you tell me, please, which way I ought to go from here?"
17	C	Dissatisfied is the best antonym for the word "pleased".
18	D	Alice has left the house when she brings the baby into the "open air", and she saw the pig "trot away quietly into the wood".
19	C	Third person "she" narrative
20	A	This text is most appropriate for children.

Alice in Wonderland – Perfect Pronouns page 15

1) I
2) you
3) She
4) yourself
5) herself
6) her

Test 20 — pages 90-93

1. D
In option A, the square has been rotated 45 degrees. Option B has the wrong shading. In option C, the diagonal line has not been reflected.

2. C
Option A is the wrong shape. In option B, the black circle is in the wrong place. In option D, the grey and white shapes have swapped shadings.

3. D
Option A has the wrong shading. In option B, the grey circle is in the wrong place. In option C, the wrong part of the large shape is black.

4. C
In option A, the grey squares have all moved up one place. In option B, the black squares have not been reflected. In option D, there are too many grey squares and not enough black squares.

5. B
Option A has the wrong layering. In option C, the black shape has not been reflected. Option D has the wrong shading.

6. C
Going in a clockwise direction, the raindrop rotates 60 degrees anticlockwise and its shading alternates between grey and white. The triangle moves one place clockwise round the corners of the hexagon and its shading alternates between white and black.

7. D
The hexagons on opposite sides of the hexagonal grid contain the same 'L' shape. Going in a clockwise direction, the line moves one place clockwise round the sides of the hexagon.

8. B
Going in an anticlockwise direction from the bottom right hexagon, an extra grey rectangle is added. The grey rectangle from the previous hexagon turns white. Every other hexagon contains two horizontal lines.

9. D
Going in a clockwise direction, the right-hand arrowhead changes to a new arrowhead and the arrow reflects across.

10. A
All figures must have five sides.

11. A
In all figures, there must be a heart, a square and a raindrop. The order of shading of the small shapes from top to bottom must be: grey, black, white.

12. D
In all figures, there must be a circle on each corner and on one side of the white shape. The black shape must be a smaller 90 degree clockwise rotation of the white shape.

13. C
All figures must contain an equal number of black, grey and white shapes.

14. E
In all figures, there must be four rows of cubes. The cubes in the top and bottom rows must be grey and the rest must be white.

15. E
Shape E has been rotated 90 degrees towards you top-to-bottom. It has then been rotated 90 degrees clockwise in the plane of the page.

16. B
Shape B has been rotated 180 degrees top-to-bottom. It has then been rotated 90 degrees anticlockwise in the plane of the page.

17. A
Shape A has been rotated 90 degrees clockwise in the plane of the page. It has then been rotated 180 degrees left-to-right.

18. C
Shape C has been rotated 90 degrees towards you, top-to-bottom. It has then been rotated 90 degrees anticlockwise in the plane of the page.

Test 21 — pages 94-97

1. C
In each series square, the arrow rotates 45 degrees clockwise. The position of the black dot alternates between the two ends of the arrow.

2. D
In each series square, the small shape at the front gets bigger and moves to the back. The other two shapes get smaller. The largest and smallest shapes are always white and the middle shape is always black.

3. B
In each series square, an extra triangle is added to the next side of the white shape going in a clockwise direction. One circle is removed going in an anticlockwise direction.

4. A
The cube turns once in each series square. The top face becomes the front face and a new cube face appears at the top.

5. A
In each series square, the large shape takes on the shading of the small square in the previous series square and a new shading appears in the small square.

6. C
Working from left to right, the third grid square is made up of a small copy of the shape in the first grid square in front of the shape in the second grid square. The shapes then swap shadings.

7. D
Working from left to right, each shape moves one place to the right. Working down each grid square, the order of shading of the shapes is: black, grey, white.

8. E
Working from left to right, the small black shape moves anticlockwise round the corners of the grid square. The hatched shadings in the first and second grid squares of each row are added together to make the hatching in the third grid square.

9. D
Working from left to right, the number of lines of symmetry of the figure increases by one (ignoring any hatching). Each shading (black, white and hatched) only appears once in each row and column.

10. B
There are four blocks visible from above, which rules out option D. There is only one block visible on the right-hand side, which rules out options A and C.

11. D
There are five blocks visible from above, which rules out option B. There is only one block visible at the back, which rules out options A and C.

12. A
There are six blocks visible from above, which rules out options C and D. There are only two blocks visible on the left-hand side, which rules out option B.

13. A
There are seven blocks visible from above, which rules out option C. There is a line of three blocks in the middle (from top to bottom), which rules out options B and D.

14. B
The figure is rotated 180 degrees. Option A has the wrong line type. In option C, the grey triangle is too small. In option D, the line crosses the wrong end of the shape.

15. B
The figure is rotated 45 degrees anticlockwise. In option A, the line thicknesses are wrong. Option C is a rotated reflection. In option D, the star has the wrong rotation.

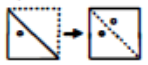
16. A
The figure is rotated 180 degrees. Option B is a rotated reflection. In option C, the dots are in the wrong places. Option D doesn't have enough dots.

17. B
The figure is rotated 90 degrees anticlockwise. Option A is a rotated reflection. Option C doesn't have enough lines. Option D has the wrong shading and is a rotated reflection.

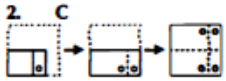
18. A
The figure is rotated 90 degrees clockwise. In option B, the black arrow is at the back. Options C and D have the wrong shading and layering.

Test 4 — pages 21-24

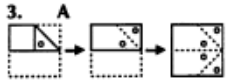
1. B



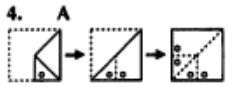
2. C



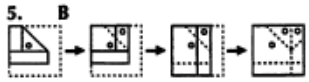
3. A



4. A



5. B



6. C
The bottom block in C is the block at the bottom of the figure. The other block in C is on top of it.

7. D
The bottom block in D goes at the back of the figure. The top left block in D is the block at the bottom right of the figure. The top right block in D is at the front of the figure.

8. A
The top block in A is the block on the right of the figure. The bottom block in A goes at the bottom left of the figure. The other block in A goes on top of it.

9. D
The top block in D is the block at the back of the figure. The other two blocks are arranged in front of it.

10. B
There should be a blue cube at the top right of the figure, which rules out options A and C. The block on the left of the figure should be two cubes tall, which rules out option D.

11. C
The block on the right when viewed from the left should be two cubes long and lying on its side. This rules out options A and B. There should be a block two cubes tall in the middle of the figure, which rules out option D.

12. B
There should be just one cube at the top right when viewed from the left. This rules out options A and D. The block on the left should be three cubes tall, which rules out option C.

13. D
There should be a block two cubes tall in the middle of the figure at the back when viewed from the left. This rules out options A and B. There should be a block two cubes tall on the right, which rules out option C.

14. C
Option A is ruled out because the grey circle and black and white squares must be on opposite sides. Option B is ruled out because the grey face and white diamond must be on opposite sides. Option D is ruled out because there is no black circle on the net.

15. B
Option A is ruled out because if the grey semicircle is on the top and the black semicircle is on the front, then the black stripe should be on the right. Option C is ruled out because there is no white pentagon on the net. Option D is ruled out because the hexagon and the black semicircle must be on opposite sides.

16. A
Option B is ruled out because the black triangles should be pointing towards the oval. Option C is ruled out because the grey heart and the grey cross must be on opposite sides. Option D is ruled out because if the grey cross is on the top and the three black triangles are on the front, then the two black triangles should be on the right.

17. A
Option B is ruled out because the grey arrow should be pointing towards the black diagonal line. Option C is ruled out because the black triangle and the black arrow must be on opposite sides. Option D is ruled out because the white triangle should be pointing towards the black triangle.

Test 29 — pages 104-107

1. C
The poem's narrator says he heard "rapping at my chamber door" (line 4). 'Chamber' is another word for 'bedroom'.

2. A
In line 8, the embers of the fire are described as "dying", meaning that they are going out.

3. C
In lines 9-10, the narrator says: "vainly I had sought to borrow / From my books surcease of sorrow". "surcease of sorrow" means "relief from feeling sad", so the narrator is reading books to stop feeling sad."

4. D
These lines imply that Lenore is in the presence of angels, suggesting that she is in heaven and no longer alive.

5. B
In line 18, the narrator says "This it is, and nothing more" — he is repeating himself and telling himself that the noise has a simple explanation.

6. B
Line 3 states "While I nodded, nearly napping, suddenly there came a tapping", showing the narrator was almost asleep. Line 14 describes the narrator's "fantastic terrors never felt before", showing that he is scared.

7. D
Line 19 states "Presently my soul grew stronger; hesitating then no longer", meaning the narrator doesn't feel scared anymore.

8. figure
The other three are parts of the body.

9. study
The other three are communal rooms, not usually found in a private home.

10. attention
The other three mean 'endorsement'.

11. sanction
The other three mean 'forgiveness'.

12. snack
The other three are mealtimes.

13. nominal
The other three mean 'worth a great deal'.

14. criticise
The other three mean 'to look at in detail'.

15. rash
'rash' can mean 'a skin irritation' or 'careless'.

16. property
'property' can mean 'something that someone owns' or 'a characteristic'.

17. repeat
'repeat' can mean 'to imitate' or 'to say or do again'.

18. convention
'convention' can mean 'an assembly of people' or 'a tradition'.

19. moor
'moor' can mean 'uncultivated land' or 'a harbour'.

20. well
'well' can mean 'fully' or 'capably'.

Test 18 — pages 55-57

1. ICE
The complete word is PRICES.

2. APP
The complete word is TAPPING.

3. AND
The complete word is BRANDS.

4. IRE
The complete word is SIRENS.

5. USE
The complete word is DEFUSES.

6. VIE
The complete word is ENVIES.

7. wizardry
The other three refer to people with magical powers.

8. erased
The other three mean 'damaged or made dirty'.

9. resentful
The other three mean 'unfriendly'.

10. armed
The other three mean 'guarded'.

11. bashful
The other three mean 'obedient'.

12. injury
The other three mean 'catastrophe'.

13. ac**knowl**edge
'disclaim' means 'to deny', whereas 'acknowledge' means 'to accept'.

14. d**edu**ction
'increase' means 'addition', whereas 'deduction' means 'subtraction'.

15. c**lum**sy
'coordinated' means 'all parts acting together', whereas 'clumsy' means 'awkward in movement'.

16. t**imi**d
'courageous' means 'brave', whereas 'timid' means 'nervous'.

17. aggravate
'appease' means 'soothe', whereas 'aggravate' means 'annoy'.

18. ha**rmle**ss
'dangerous' means 'harmful', whereas 'harmless' means 'not dangerous'.

19. neg**ligen**ce
'care' means 'attention to detail', whereas 'negligence' means 'lack of care'.

20. dire
Both words mean 'terrible'.

21. appreciative
Both words mean 'thankful'.

22. communicate
Both words can mean 'to exchange ideas with other people'.

23. animated
Both words mean 'energetic'.

24. notion
Both words mean 'an idea'.

25. strain
Both words mean 'to elongate'.

Paper 5

foe
2 heir
3 rough
4 calm
5 middle
6 milk, water
7 come, join
8 scales, feathers
9 you, me
10 odd, normal
11 block
12 fare
13 crop
14 post
15 mind
16 30
17 58
18 7
19 47
20 5
21 bad
22 tease
23 matter
24 truce
25 stems
26 highlight
27 ringlet
28 farewell
29 overboard
30 crossbow
31 tour
32 soar
33 chin
34 seat
35 scan
36 sorted
37 haven
38 mined
39 print
40 bride
41 car, lane, pedestrian
42 books, desk, lesson
43 Pink, colour, scarf
44 scene, streets
45 darkness, thief, window
46 KO
47 DWE
48 KPD
49 HJH
50 LF
51 BEAR, BEAT
52 BAND, BANK
53 FOAM, FORM
54 PATS, PASS
55 HAND, HIND
56–59 *Give two marks for each correct crossword.*

H	A	M
O	R	E
D	E	N

A	L	E
S	E	W
H	O	E

60 21, 57
61 8, 13
62 100, 79
63 saddle, tyre
64 east, west
65 grass, wall
66 cushion, needle
67 trumpet, nose
68 CAPE
69 ARE
70 = £ × × +
71 + × @ £
72 = £ @ + ÷ ×
73 RULE
74 PLASTER
75 PLEASE
76 TRUST
77 OCEAN
78 25
79 29
80 28