BROAD HORIZON
TUITION CENTRE

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TUITION CENTRE

11+ Tuition – Year 5

Week 15 - Online

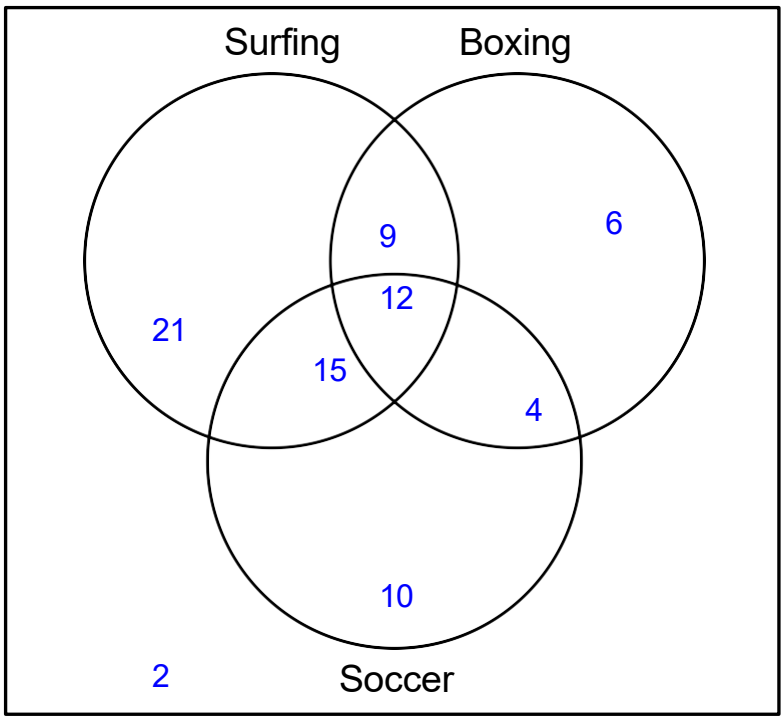
ANSWERS

Date: _____

Name : _____ Score : _____

Teacher : _____ Date : _____

Answer the Questions Based on the Venn Diagram



1) How many students like both Boxing and Soccer but not Surfing ? 4

2) How many students like both Surfing and Soccer but not Boxing ? 15

3) How many students like both Surfing and Boxing ? 21

4) How many students like both Surfing and Soccer ? 27

5) How many students do not like either Surfing or Soccer ? 8

6) How many students do not like both Surfing and Soccer ? 52

7) How many students like Surfing or Soccer ? 71

8) How many students do not like either Boxing or Soccer ? 23

9) How many students like both Boxing and Soccer ? 16

10) How many students do not like either Surfing or Boxing ? 12

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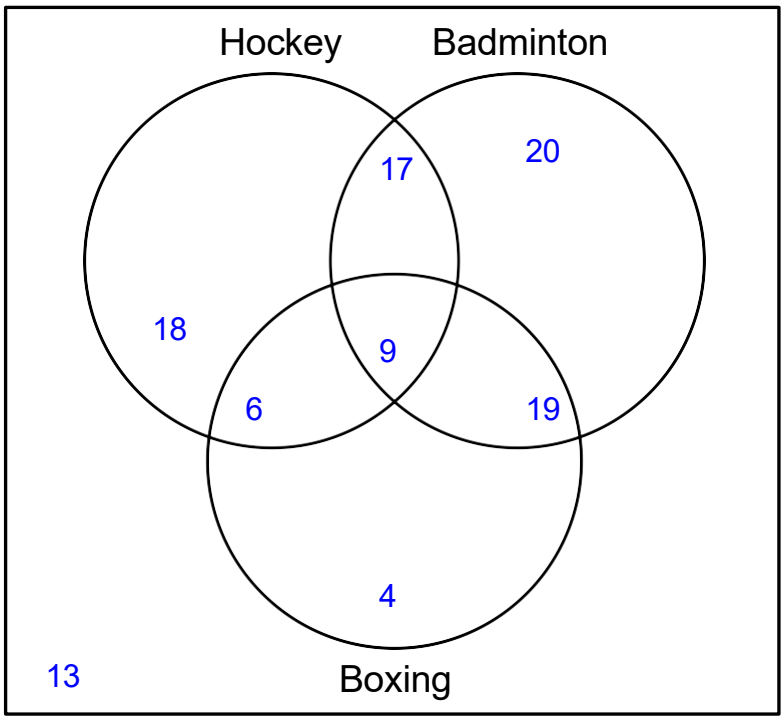


Answer the Questions Based on the Venn Diagram

1) How many students only like Hockey ? 18

2) How many students like Hockey or Badminton ? 89

3) How many students like Hockey or Badminton or Boxing ? 93

4) How many students do not like both Hockey and Boxing ? 91

5) How many students do not like either Hockey or Boxing ? 33

6) How many students like both Hockey and Boxing ? 15

7) How many students like both Badminton and Boxing but not Hockey ? 19

8) How many students do not like either Hockey or Badminton ? 17

9) How many students like Hockey or Badminton but not Boxing ? 55

10) How many students do not like both Badminton and Boxing ? 78

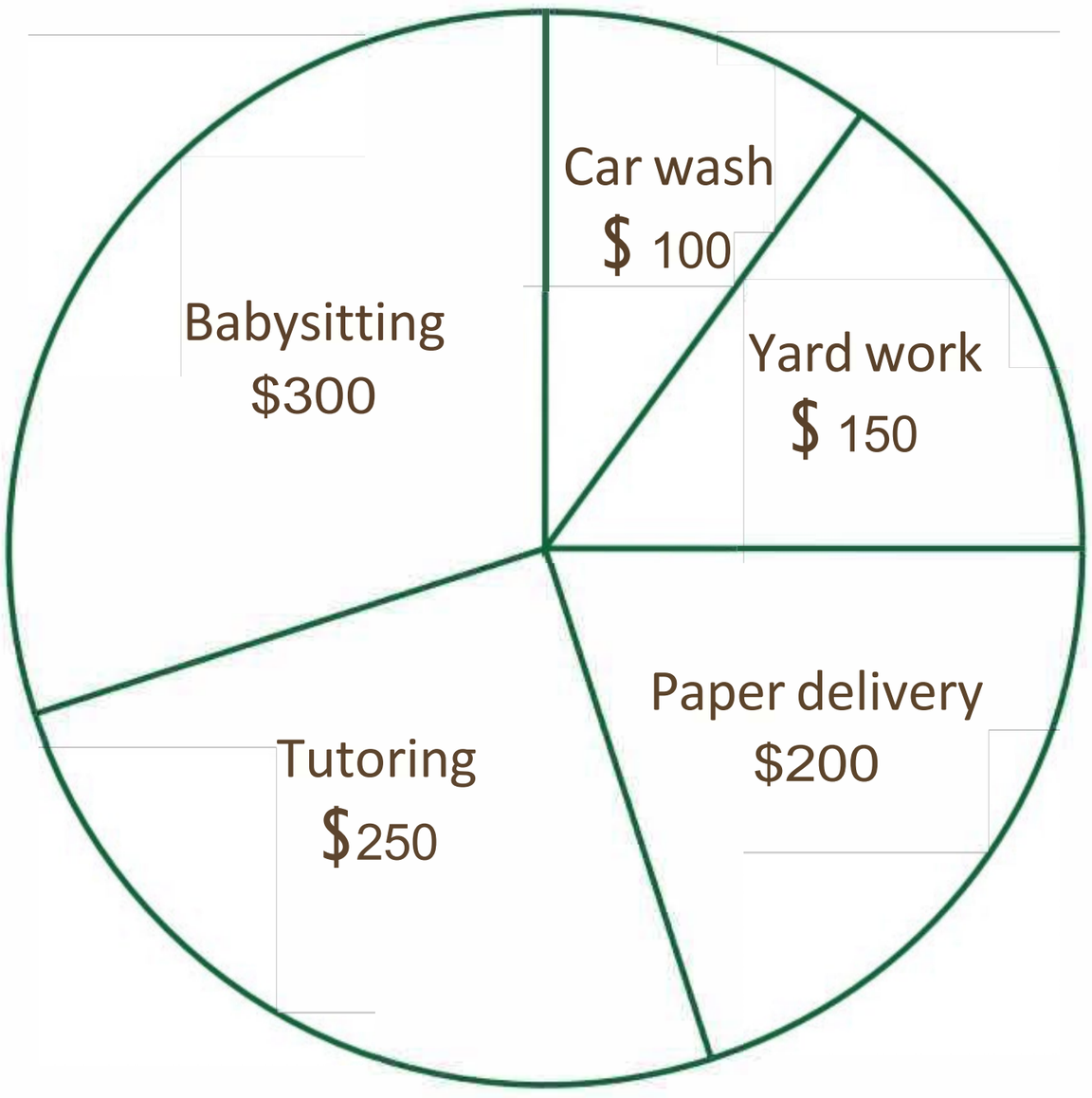
1) Area = 17.5cm squared Perimeter = 19cm
2) 205 (41 x 5)
3) 104 (26 x 4)
4) 3
5) 7%
6) 6
7) 0.008
8) 1944
9) 242
10) 81 (180 - 99)
11) 116 (180 - 64)
12) 1080
13) 360
14) 135
15) Not All angles are equal
16) 40%
17) 5.25 (21/4)
18) 4
19) 25

Name: _____ Score: _____

Answer Key

Pie Graph - Edna's Earnings

Edna earned a good income during her summer vacation. The pie graph displays the money she earned by doing different jobs. Use the pie graph to answer the questions.



1) What fraction of amount did she earn by doing yard work? ____$\frac{3}{20}$____

2) Which was her highly paid job? **Babysitting**

3) What fraction of amount did she earn tutoring? $\frac{1}{4}$

4) How much she would have earned if she did not take the job as a Papergirl? **800**

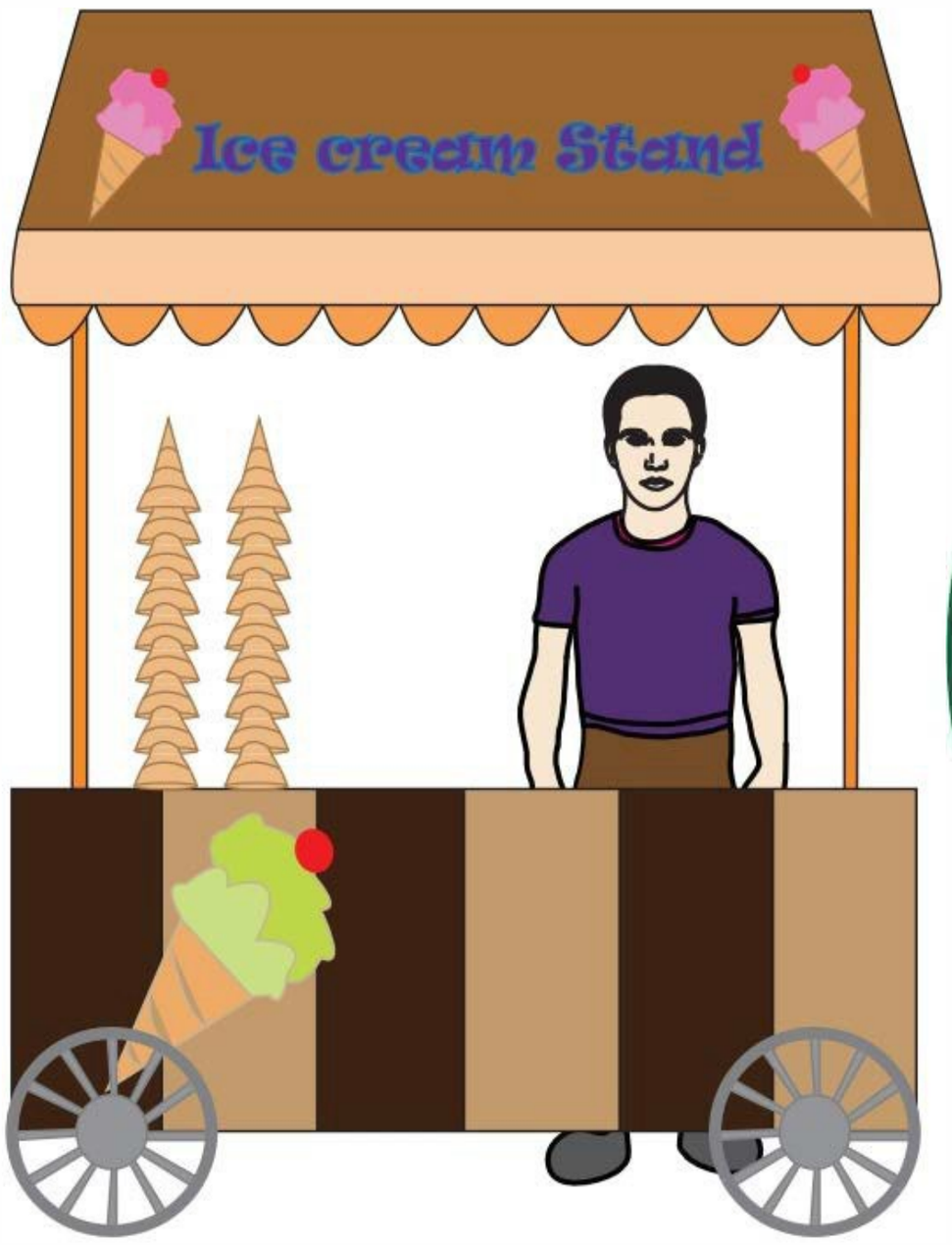
5) Which job earned Edna twice as much as car wash? **Paper delivery**

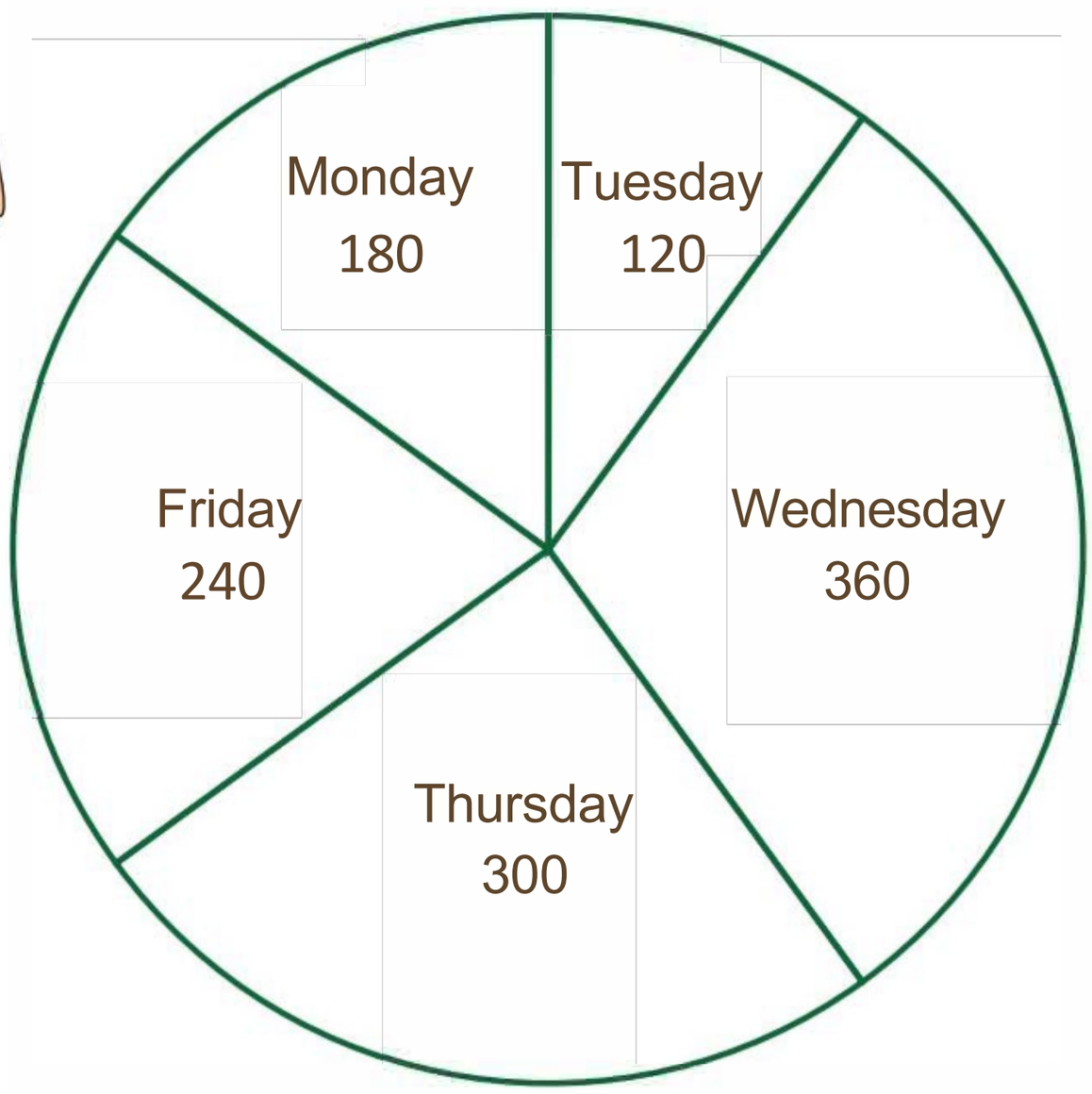
Name: _____ Score: _____

Answer Key

Pie Graph - Icecream Sales

John, an ice cream seller sells ice cream during weekdays. The pie graph display the number of ice cream sold. Study the pie graph and answer the questions.





1. What is the percentage of ice cream sold on Thursday? **25 °/o**

2. What are the two days that equal the sales on Wednesday? **Tuesday, Friday**

3. When did John sell most of the ice cream in his stand? **Wednesday**

4. On which day 300 ice creams were sold? **Thursday**

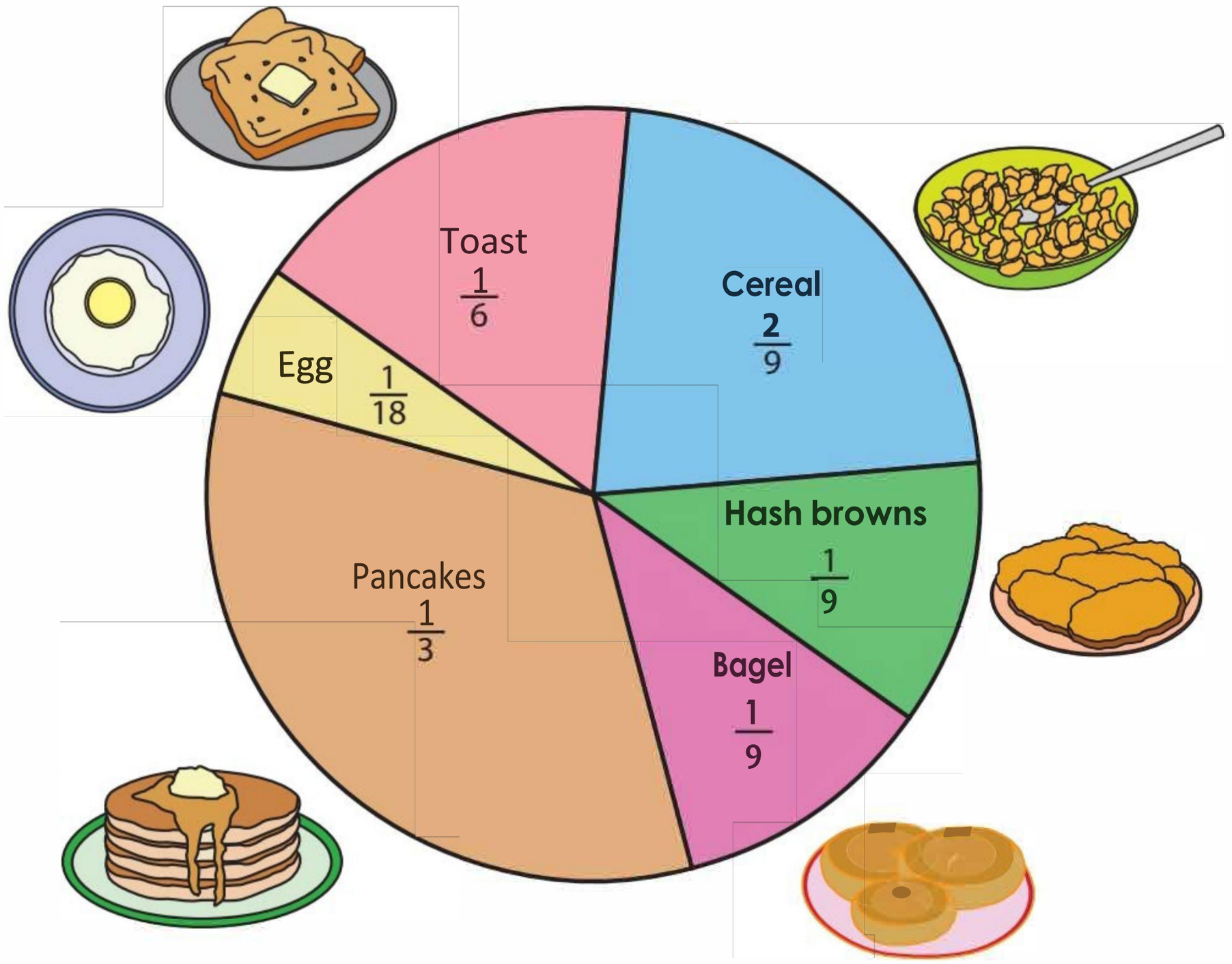
5. What is the difference in percentage of ice cream sold between Wednesday and Friday? **10°/o**

Name: _____ Score: _____

Answer Key

Pie Graph - Favorite Breakfast

108 people were surveyed on their favorite breakfast. The pie graph is made according to their responses. Use the pie graph and answer the questions.



1. How many people like to eat cereal for breakfast? **24**

2. Which food got half the number of votes of bagel? **Egg**

3. How many people would like to have toast? **18**

4. How many people did not vote for pancakes? **72**

5. Which morning meal is the favorite choice of 18 people from the survey? **Toast**

Name : _____ Score : _____

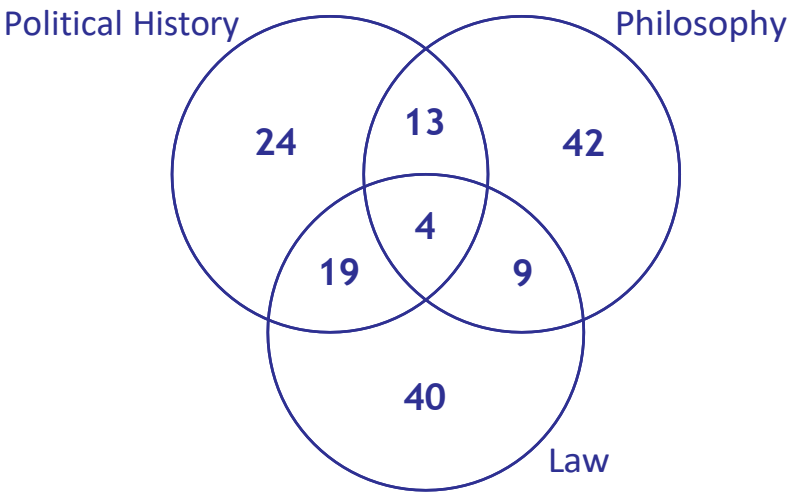
Answer key

Venn Diagram - Without Universal Set

Standard: S2

Read each Venn diagram and answer the questions that follow.

1) Represented below in the Venn diagram are the number of research papers presented by University students on subjects of political history, philosophy, and law.



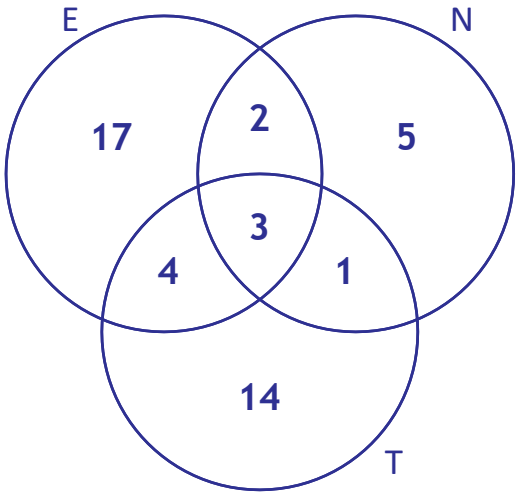
a) Find the number of students who presented research papers on political history.

60 students

b) How many research papers were based neither on political history nor on philosophy?

40 research papers were based on law

2) Dr. Allen, an ENT specialist treats patients with ear (E), nose (N), and throat (T) complaints. The Venn diagram below represents the number of patients he kept appointments with on a Monday morning.



a) How many patients with ear complaints visited Dr. Allen on Monday?

26 patients

b) Find the number of patients who came in with nose and throat but not ear complaints.

1 patient

Name : _____ Score : _____

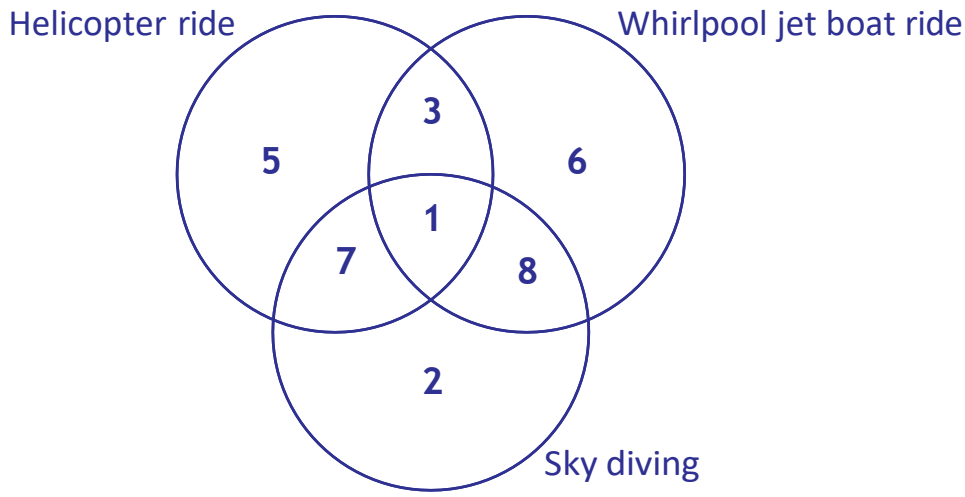
Answer key

Venn Diagram - Without Universal Set

Standard: S3

Read each Venn diagram and answer the questions that follow.

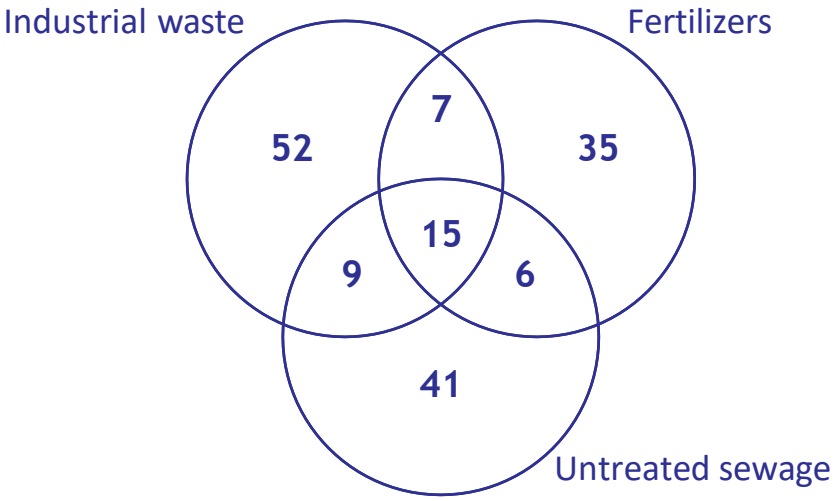
1) The Venn diagram below represents a group of friends who chose one or more of the following rides at the Niagara falls - Helicopter ride, whirlpool jet boat ride, and sky diving.



a) How many friends did not opt for sky diving? **14 friends**

b) Find the number of friends who wanted to take a helicopter ride. **16 friends**

2) The Venn diagram below indicates the number of rivers polluted with industrial waste, fertilizers, and untreated sewage.



a) How many rivers are polluted by fertilizers? **63 rivers**

b) Write the number of rivers a!ected by both industrial wastes and untreated sewage. **24 rivers**

15. D

To find the minimum number of songs that can fit on the MP3 player, you need to imagine that each song is the longest time possible — 3 minutes. 45 ÷ 3 = 15, so 15 songs is the minimum number that Grace can store.

16. 3

Work backwards through the calculation from 51 to find Ant's starting number. The last thing he did was to add 15, so subtract 15: 51 – 15 = 36. He multiplied a number by itself to give 36, so find this number. 6 x 6 = 36, so the number Ant multiplied by itself was 6. He doubled the number to get 6, so halve 6 to find the starting number: 6 ÷ 2 = 3.

17. £0.42

In the pack of 4 peppers, the cost per pepper is £1.80 ÷ 4 = £0.45. In the pack of 6 peppers, the cost per pepper is £2.52 ÷ 6. Work this out using short division: $6\overline{)2.5{}^{2}5{}^{1}2}$ = 0.42

So the cheapest amount you could pay per pepper is £0.42.

18. D

A: This can be true, e.g. there could be 30 tulips and 25 daffodils.
B: This can be true, e.g. there could be 34 daffodils and 21 tulips.
C: This can be true, e.g. there could be 28 daffodils and 27 tulips.
D: This cannot be true. The total number of bulbs is odd (55), so the sum of the number of daffodils and tulips must be an odd number added to an even number. The difference between an odd number and an even number is always odd. 8 is an even number, so this cannot be true.
E: This can be true, e.g. there could be 30 tulips and 25 daffodils.

19. £8.20

Each person is having one cupcake so Laura needs 20 cupcakes. This will cost 20 x 15p = 300p = £3
Each person is having half of a doughnut so Laura needs 20 ÷ 2 = 10 doughnuts.
This costs 10 x 52p = 520p = £5.20
So, altogether Laura will spend £3 + £5.20 = £8.20 on the cakes.

20. 9

Work out the cost of 15 doughnuts: 15 x £0.52 = £7.80. Subtract this from £10 to work out how much left he has to spend on muffins. £10 – £7.80 = £2.20. Work out how many times 24p goes into 220p. 220 ÷ 24 = 9 remainder 4. So he has enough money to buy 9 muffins.

Section Four — Data Handling

Pages 22-23

1. E

The highest score in the table is 43. Nina got 43, so Nina scored the highest mark.

2. B

Kate scored 39, so a score exactly 20 less than this would be 39 – 20 = 19. Paula scored 19.

3. 24

Nina scored 43 and Paula scored 19. So the difference between their marks is 43 – 19 = 24.

4. 13

The test was out of 50 and George scored 37. So George must have lost 50 – 37 = 13 marks.

5. Train B

Train B arrives in Banbridge at 12:00. The next train (Train C) doesn't arrive until 14:45. This would be too late if Robert needs to be in Banbridge by 12:15.

6. Train C

Counting from the departure time to the arrival time tells you how long each train takes. There are 2 hours from 12.00 to 14:00, and a further 45 minutes to 14.45. So train C takes 2 hours 45 minutes.

7. Train B

10:30 to 11:30 is 1 hour, plus 30 minutes to get to 12:00. So train B takes 1 hour 30 minutes.

8. D

There are 3 squid and 12 turtles, 3 x 4 = 12 so there are 4 times as many turtles as squid.

9. 21

There are 25 eels and 4 otters, 25 – 4 = 21.

10. 128

There are 43 crabs, 9 lobsters and 76 starfish. So 43 + 9 + 76 = 128.

11. A

The faster the runner the lower their time. Ahmed had the fastest time at 10.9 secs, followed by Louisa with 11.1 secs and then Alan with 12.8 secs, so Alan came third.

12. B

Alan finished in 12.8 secs, 2.5 secs after him would be 12.8 + 2.5 = 15.3 secs. This was Carol's time.

13. 3.4 seconds

Louisa finished in 11.1 secs and Marg finished in 14.5 secs, so 14.5 – 11.1 = 3.4 secs.

14. A

Archers who scored 16-20 points or 21-25 points scored more than 15 points in total. 13 archers scored 16-20 points and 5 archers scored 21-25 points, so 13 + 5 = 18 scored more than 15 — so A is true.

15. C

The highest frequency was 19 so the most frequent score was 11-15.

16. 16

Archers who scored 11 or more are in the score groups 11-15, 16-20 and 21-25, which is 19 + 13 + 5 = 37 people. Archers who scored less than 11 are in the score groups 0-5 and 6-10, which is 9 + 12 = 21 people. So 37 – 21 = 16 people.

17. 2

From the table, Kylie spent £11.50 on cakes in total. She spent £1.50 on a Victoria sponge and £4.00 on lemon drizzles, so she must have spent £11.50 – £4.00 – £1.50 = £6.00 on fruit cakes. Fruit cakes cost £3.00 each, so she must have ordered 6.00 ÷ 3.00 = 2 fruit cakes in total.

18. £19.00

The original total for the order was £11.50. Two more fruit cake would cost 2 x £3.00 = £6.00, and an extra Victoria sponge costs £1.50. The new total is £11.50 + £6.00 + £1.50 = £19

Pages 24-25

1. P4

The class with the fewest children will have the lowest bar — class P4.

2. 25

Each division on the vertical axis shows 2 children. The top of the bar for class P2 is 2½ divisions above 20. 2½ divisions is the same as 5 children (2 x 2 ½= 5). Class P2 has 20 + 5 = 25 children.

3. P1 and P5

Find the point on the vertical axis that shows 28 children, then look across to see which bars are taller than this point. P1 and P5 are the only classes with more than 28 children.

4. 7

Reading from the bar chart, class P3 has 28 children in it. Class P4 only has 21 children in it. So there are 28 – 21 = 7 more children in class P3 than in P4.

5. 11

Each symbol on the pictogram shows 2 people. There are 5 ½ symbols for tea. 5 x 2 = 10 and ½ x 2 = 1. 10 + 1 = 11 people prefer tea.

6. 14 °C

Find 11:00 on the horizontal axis and move straight up until you reach the graph line. At this point, move across to the vertical axis and read off the temperature (14 °C).

7. 5 °C

The lowest temperature will be the lowest point on the graph. The lowest temperature was recorded at 9:00. Reading off the graph, the temperature at 9:00 was 5 °C.

8. B

The biggest temperature rise happens between the two times on the graph that have the biggest vertical difference between them. This happens between 10:00 and 11:00 when the rise in temperature is 14 – 8 = 6 °C.

9. C

Read off the graph how many tourists chose each city: London = 30, Bristol = 16, Manchester = 24, Liverpool = 13, York = 19.
Then find the total number of people in the survey by adding all these values together. 30 + 16 + 24 + 13 + 19 = 102.

10. 28 m

Reading off the graph, 1 floor is 2 m tall, so 14 floors would be 2 x 14 = 28 m tall.
Alternatively, reading off the graph, 7 floors are 14 m tall. 14 ÷ 7 = 2, so 14 floors must be 2 x 14 = 28 m tall.

11. 4 hours

Find the total hours Sam and Sanjay worked out by adding together the number of hours they worked out each week.
Sam worked out for 4 + 8 + 10 = 22 hours.
Sanjay worked out for 5 + 4 + 9 = 18 hours.
22 – 18 = 4 so Sam worked out for 4 hours more than Sanjay.

12. B

Each school played 32 matches. From the pie charts, Eastwick School drew half of their matches. 32 ÷ 2 = 16, so Eastwick School played 16 drawn matches and statement B is true.

13. 9

Each symbol on the pictogram shows 4 CDs. So each ½ symbol shows 2 CDs, and each ¼ symbol shows 1 CD.
The Victories sold 4½ symbols = 4 x 4 CDs + 2 CDs = 18 CDs.
The Moofs sold 2¼ symbols, 2 x 4 CDs + 1 CD = 9 CDs.
18 – 9 = 9, so the Victories sold 9 more CDs than the Moofs.

14. 40

2 bedroom and 3 bedroom houses make up all the houses with more than one bedroom.
The right angle signs in the sections for 2 bedroom and 3 bedroom houses mean that they each take up ¼ of the pie chart. You can work that out because there are 4 right angles in a circle, so 1 right angle would be ¼ of a circle.
This means that 2 and 3 bedroom houses take up ¼ + ¼ = ½ of the pie chart, so half of the people live in a house with more than 1 bedroom. The total number of people is 80, so 80 ÷ 2 = 40 people live in houses with more than 1 bedroom.

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Each symbol on the pictogram shows 2 people.
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Then find the total number of people in the survey by adding all these values together.
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The right angle signs in the sections for 2 bedroom and 3 bedroom houses mean that they each take up ¼ of the pie chart. You can work that out because there are 4 right angles in a circle, so 1 right angle would be ¼ of a circle.
This means that 2 and 3 bedroom houses take up ¼ + ¼ = ½ of the pie chart, so half of the people live in a house with more than 1 bedroom. The total number of people is 80, so 80 ÷ 2 = 40 people live in houses with more than 1 bedroom.

TYPE TWENTY-TWO:

REAR
FIND
TRAP
EASE
CAPE
CORN
CLAY
PAST
TALK
STAB
SLIP
LOOK
MATE
CART
SEAL
PEST
SAME
STOP
LACE
SAND

ASSESSMENT TEST 7

Section 1 – Rotate the Figure

1. D

1he figure is rotated 90 degrees clockwise. Option A has a black rectangle instead of a black triangle. Option Bis a reflected rotation. In option C, the trapezium is rotated differentlyfrom the rest of the figure

2. B

1hefigure is rotated 180 degrees. Options A and Care the wrong shape. Option Dis a reflected rotation.

3. A

1hefigure is rotated 135 degrees clockwise. Option B has two black triangles. Option Cis a reflected rotation. In option D, the triangles are positioned incorrectly.

4. C

1he figure is rotated 45 degrees clockwise. Option A is a reflected rotation In option B, the circles are shaded incorrectly. In option D, there are squares instead of circles.

5. D

1he figure is rotated 225 degrees clockwise (or 135 degrees anticlockwise). In option A, the black shapes and white shapes have swapped shadings. Option Bis a reflected rotation. Option Cis the wrong shape.

6. B

1he figure is rotated 180 degrees. Options A and Dare the wrong shape. Option Cis a reflected rotation.

7. A

1he figure is rotated 135 degrees clockwise. In option B, the grey and white shapes have swapped shadings. In option C, the white cross is positioned incorrectly. Option Dis a reflected rotation.

8. D

1he figure is rotated 135 degrees clockwise. Option A is the wrong shape. In option B, the white rectangle is in front of the black lines. Option Cis a reflectedrotation.

9. C

1he figure is rotated 270 degrees clockwise (or 90 degrees anticlockwise). Option A is a reflected rotation. Option Bis the wrong shape. Option Dis a reflected rotation and the black circle is in the wrong position.

10. B

1he figure is rotated 45 degrees clockwise. OptionA is a reflected rotation. Option CIs a reflection. Option Dis the wrong shape.

Section 2-Find the Figure Like the First Three

1. B

All figures must have four sides.

2. D

All figures must be reflections or rotations of the same arrow.

3. E

All figures must have four versions of the same shape. Two of the shapes must be black and two of the shapes must be white.

4. E

All figures must contain a large hatched circle and a small black circle.

5. C

In all figures, a T-shape must be crossed by two parallel lines.

6. A

In all figures, the number of points on the star must equal the number of sides of the white shape.

7. B

In allfigures. the shape with the dotted outline must be half of the black shape.

8. C

All figures must have one white circle, one grey circle and one black circle. In all figures, the large shape must have six sides.

Section 3 – 3D Rotation

1. B

Shape B has been rotated 90 degrees clockwise in the plane of the page.

2. E

Shape E has been rotated 90 degrees away from you top-to-bottom.

3. C

Shape C has been rotated 90 degrees right-to-left.

4. D

Shape D has been rotated 90 degrees clockwise in the plane of the page.

5. E

Shape E has been rotated 90 degrees right-to-left.

6. B

Shape B has been rotated 90 degrees right-to-left.

7. D

Shape D has been rotated 90 degrees clockwise in the plane of the page.

8. A

Shape A has been rotated 90 degrees anticlockwise in the plane of the page. It has then been rotated 90 degrees away from you top-to-bottom.

9. C

Shape C has been rotated 90 degrees away from you top-to-bottom.

10. F

Shape F has been rotated 90 degrees right-to-left.

Section 4 - Odd One Out

1. B

All other figures have a solid outer line and a dashed inner line.

2. E

In all other figures, the black shapes are smaller versions of the outer shape.

3. D

All other figures are identical apart from rotation (the circles in D are in different places).

4. B

In all other figures, the shape on the right is a 45 degree clockwise rotation of the shape on the left.

5. C

In all other figures, the feet are on the straight side of the shield shape.

6. E

In all other figures, the diamond is on the left of the triangle.

7. A

In all other figures, the white shape is at the front.

8. B

In all other figures, the star is next to the flagpole.

Section 5 - 2D Views of 3D Shapes

1. D

There are four blocks visible from above, which rules out options A and C. There are three blocks at the front of the shape, which rules out option B.

2. C

There are four blocks visible from above, which rules out options A and B. There are two blocks at the front of the shape, which rules out option D.

3. B

There are five blocks visible from above, which rules out options A and C. There are three blocks in a row at the back of the shape, which rules out option D

4. A

There are five blocks visible from above, which rules out options C and D. There are two blocks at the back of the shape, which rules out option B.

5. C

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

6. D

There are five blocks visible from above, which rules out options B and C. There are three blocks at the front of the shape, which rules out option A.

7. D

There are five blocks visible from above, which rules out options B and C. There is one block at the front of the shape, which rules out option A.

8. C

There are five blocks visible from above, which rules out options A and B. There are two blocks at the front of the shape (with a gap between them), which rules out option D.

Quick Lesson Recap

1. What is 20% of 250?

   50

2. What is 45% of 320?

   144

3. What is 65% of 700?

   455

4. Workout three-quarters of 244

   183

5. Workout $\frac{5}{7}$ of 357

   255

6. Convert $\frac{9}{15}$ into a percentage

   60%

7. What is the mean of 11, 7, 4 and 2

   6

8. $5 \div 1000 =$

   0.005

9. What is the LCM of 6 and 8 ?

   24

10. $(8-5)^2 + 3 \times 5 \div 2$

    16.5

1) 89 (180 - 91)
2) 72 (180 - 108)
3) 720
4) 360
5) 140 (1260/9)
6) Not all angles were equal
7) 60%
8) 11
9) 7
10) 124