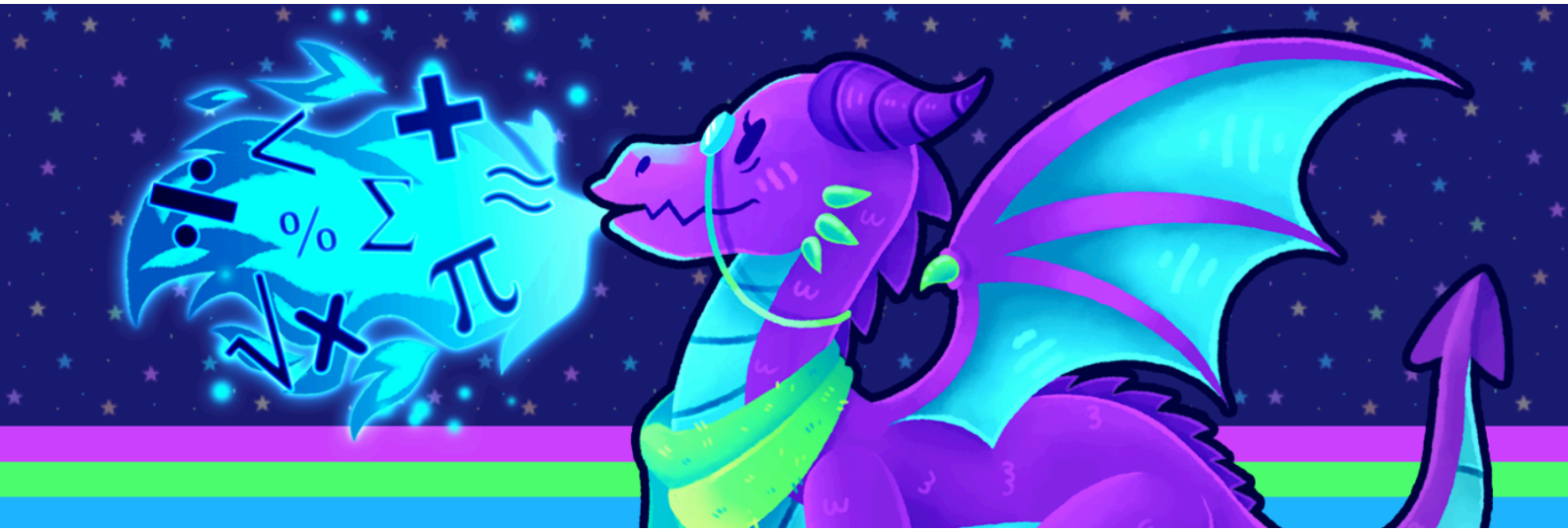


2nd Year Course Revision Booklet
Level 3

Checklist

- Money
- Fractions
- Angles
- Algebra
- Powers and Roots
- Multiples and Factors
- Patterns
- 2 – Dimensions
- Scale Drawings
- Proportion
- Symmetry
- Probability
- Statistics
- Rounding to Significant Figures

Money

Use the exchange rate £1 = €1.16 to find out how many euros you'd receive for the following amount of money:

1. (a) £200 (b) £300 (c) £52 (d) £1,200 (e) £1

Use the exchange rate £1 = €1.16 to find out how many pounds you'd receive for the following amount of money:

2. (a) €34.80 (b) €116 (c) €487.20 (d) €1.16 (e) €290

3. Lauren exchanged £300 for €366. Calculate the exchange rate used.

4. Ryan exchanged €280 for £224. Calculate the exchange rate used.

5. Karen needed to buy shampoo. She could either buy 5 bottles for £6 or 4 for £4.72. Which is the better deal? Justify your answer.

6. Jake could either buy 600g of cereal for £3.30 or 800g of cereal for £4.20. Which is the better deal? Justify your answer.

Fractions

Calculate the following, displaying your answers in their simplest forms:

1. (a) $\frac{2}{3} + \frac{2}{5}$ **(b)** $\frac{3}{4} + \frac{1}{2}$ **(c)** $\frac{5}{6} - \frac{1}{3}$ **(d)** $\frac{1}{2} - \frac{2}{5}$

(e) $\frac{1}{3} \times \frac{4}{3}$ **(f)** $\frac{2}{3} \times \frac{2}{5}$ **(g)** $\frac{5}{7} \div \frac{1}{5}$ **(h)** $\frac{4}{6} \div \frac{1}{3}$

(i) $2\frac{1}{3} \times \frac{2}{5}$ **(j)** $\frac{7}{8} \div 1\frac{2}{5}$

Angles

1. **Calculate the complement of 32°.**

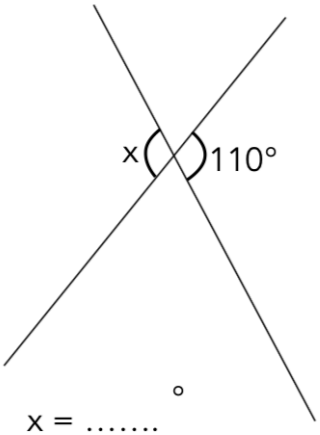
2. **Calculate the complement of 72°.**

3. **Calculate the supplement of 112°.**

4. **Calculate the supplement of 97°.**

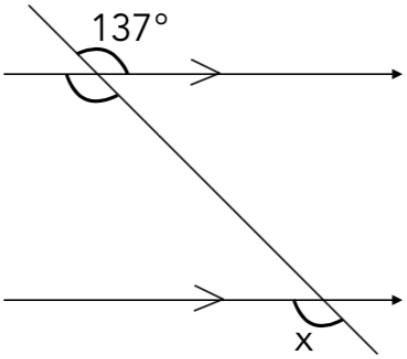
5. **Calculate the following missing angles:**

(a)

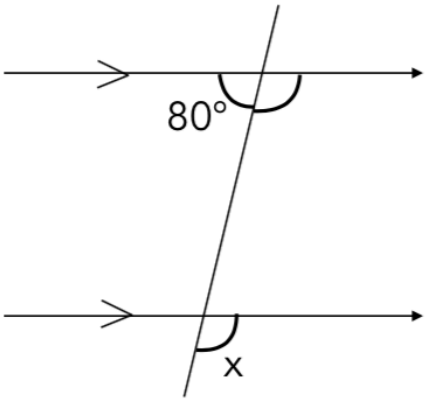


x = ... °

(b)

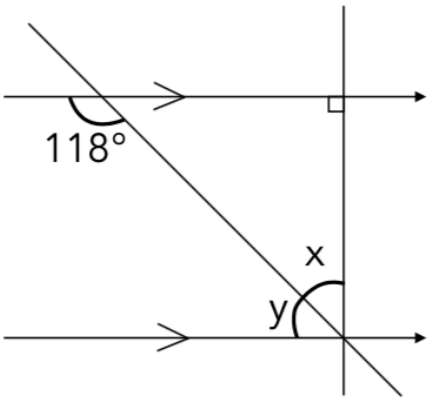


(c)



x = ... °

(d)



x = ... °

y = ... °

Algebra

Solve the following for x:

1. $3x + 5 = 23$
2. $2x + 4 = 8$
3. $3x - 1 = 11$
4. $5x - 2 = 18$
5. $3x + 2 = x + 18$
6. $4x + 8 = x + 26$
7. $6x - 1 = 2x + 23$
8. $13x - 3 = 9x + 29$
9. $2(4x + 1) = 10$
10. $2(5x - 5) = 0$
11. $8(x + 3) = 56$
12. $10(x + 4) = 2x$
13. $10x - 2 < 48$
14. $4(x - 3) > 36$
15. $8x - 20 < 0$
16. $2(5x + 4) < -2$

Powers and Roots

Calculate the following:

1. $10^2 + 7^2$
2. $2^3 + 1^2$
3. $4^3 - 2^2$
4. $1^2 - 0^2$
5. $\sqrt{16}$
6. $\sqrt{400}$
7. $\sqrt{25}$
8. $\sqrt{49}$

Multiples and Factors

1. **Write down the first 10 multiples of 3.**
2. **Write down the first 10 multiples of 7.**
3. **Find the lowest common multiple (LCM) of 5 and 3.**
4. **Find the LCM of 4 and 10.**
5. **Find the LCM of 2, 3, and 5.**
6. **Write down all the factors of 24.**
7. **Write down all the factors of 32.**
8. **Find the highest common factor (HCF) between 6 and 9.**

9. **Find the HCF between 18 and 42.**

10. **List the first 5 prime numbers.**

11. **Write down 20 as a product of its primes.**

12. **Write down 48 as a product of its primes.**

Patterns

1. **Write down the next 2 numbers in the sequences and state the rules they follow:**

(a) **80, 73, 66, 59, 52, ...** **(b)** **2, 6, 12, 20, 30, ...**

2. **The table below shows the weight in grams of a bag with lollies in it.**

No. of lollies (L)	1	2	3	4	5	6
Weight in grams (W)	50	85	120			

(a) **Copy and complete the table**

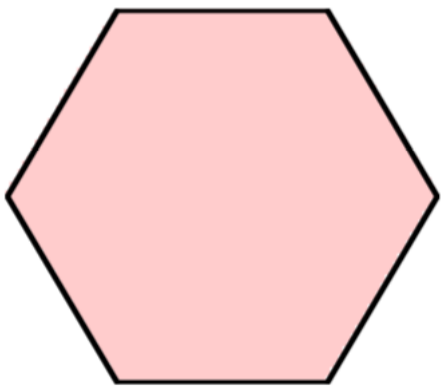
(b) **Write down the formula for the weight of the bag (W) with L lollies in it.**

(c) **How heavy will a full bag be if it contains 20 lollies?**

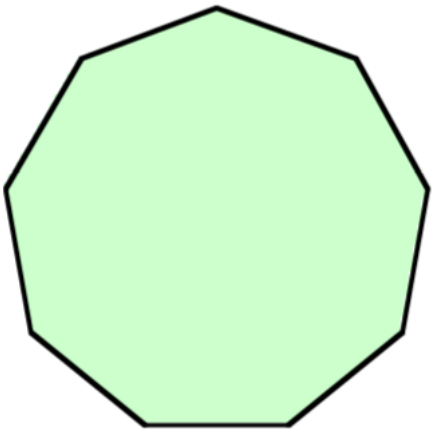
2 – Dimensions

1. **What is the mathematical name given to these polygons?**

(a)



(b)



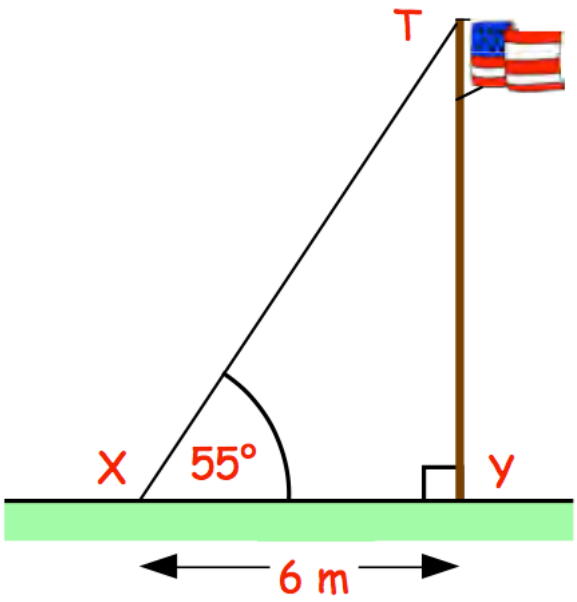
2. **Draw a triangle with 2 lengths measuring 6 cm and 8 cm, with an angle in between these lengths measuring 68°.**

Scale Drawings

1. **A toy tractor has been made to scale: 1 cm = 2.5 cm.**

   If the length of the toy tractor is 4 cm, what is the length of the real tractor?

2. **Make a scale drawing of this sketch of a flag using the scale 1 cm = 2 metres.**



What is the real height of the flag?

3. **Write down the 3 figure bearing representing:**

(a) North West **(b) South** **(c) South East**

Proportion

1. **If 5 tins of beans cost £1.50, calculate the cost of 3 tins of beans.**

2. **7 bags of crisps cost £1.54, calculate the cost of 5 bags of crisps.**

3. **Share £82 in the ratio 5:4.**

4. **Share £320 in the ratio 5:3.**

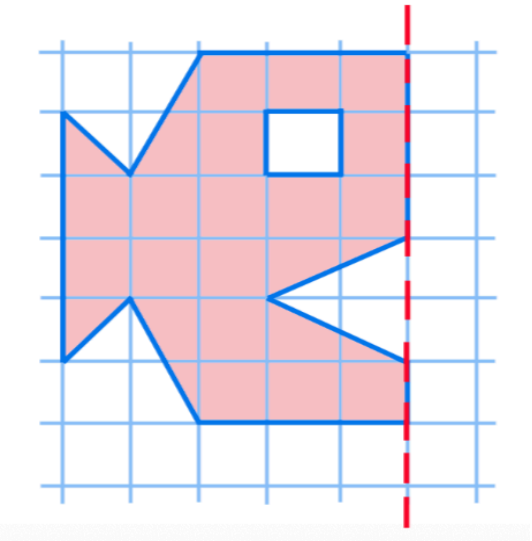
5. **Share £4200 in the ratio 1:2:3.**

6. **The number of girls to boys in a class is split in the ratio 4:5. If there are 16 girls in the class, how many boys are there?**

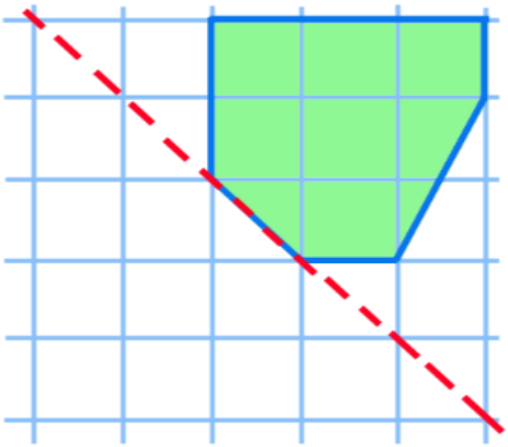
Symmetry

1. Copy each shape neatly and complete each one such that the red dotted line is a line of symmetry:

(a)

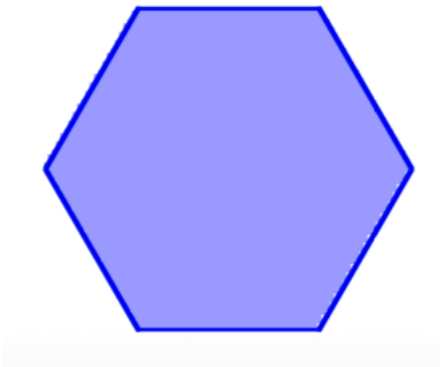


(b)

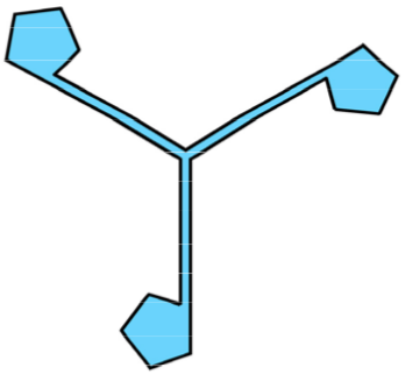


2. State the order of rotational symmetry for each shape:

(a)

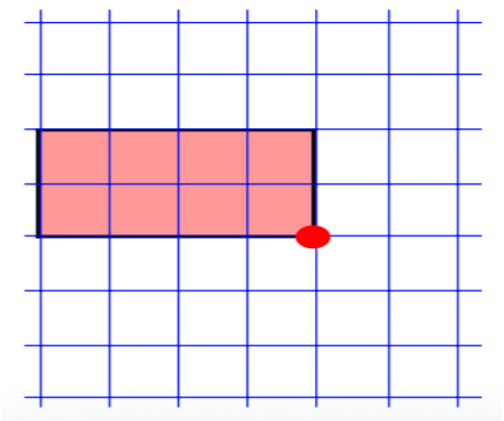


(b)

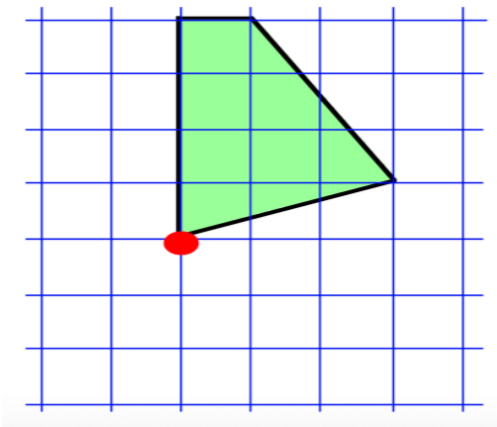


3. Copy these shapes and give each of them a half turn around the dot.

(a)



(b)



Probability

1. A bag contains 3 yellow marbles, 2 blue marbles, and 5 white marbles.

(a) If one of these is picked at random, what is the probability it will be a yellow marble?

(b) If it is a yellow marble and it is not put back into the bag, what is the probability that the next item out the bag will be a white marble?

2. In a greengrocers, the probability that there will be onions left in stock at the end of the day is known to be 0.25.

One day, there were 5 onions left in the shop at closing time.

How many must there have been in the shop that day to begin with?

3. When rolling 2 six sided dice, what is the probability that you will roll a number greater than 6?

Statistics

1. In a garden centre survey, 240 people were asked which method they preferred to get rid of weeds in their garden.

The results are shown in the pie chart.

(a) What angle at the centre is taken up by Watering Can?

(b) How many people preferred:

(i) to use a spray?
(ii) to burn the weeds?

2. Baldragon Academy conducted a survey on how children got to school. The results were as follows:

Walk Bus Car Car Walk Car Bus Bus Walk Walk Bus

Car Walk Car Car Walk Walk Walk Bus Car Walk Bus Walk

(a) **Construct a frequency table for the above data.**

(b) **Construct a bar graph showing how the children got to school.**

3. **Miss Chapman's class sat a maths test and the results were as follows (%'s):**

82 97 72 41 85 53 72 69 81 52 98 97 72 80 98 73 97 31

(a) **Construct an ordered stem-and-leaf diagram, including a key.**

(b) **What is the modal result of the test.**

(c) **Determine the median result.**

(d) **Determine the range and the mean of the results.**

Rounding to Significant Figures

1. **Round the following to 2 significant figures:**

(a) **5432** **(b)** **92.7** **(c)** **0.000891** **(d)** **579** **(e)** **3.09**