Name:

Developing Probability

Additional Tasks

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Quiz 1

1) $\frac{2}{7} + \frac{3}{7}$	2) $\frac{2}{7} \times \frac{3}{7}$	3) $1 - \frac{3}{7}$
4) 0.2 + 0.3	5) 0.2 × 0.3	6) 1 – 0.3
7) 25% + 10%	8) 25% × 10%	9) 1 – 10%

___ out of 9

Example 1

Calculate the size of the interior angle of any regular nonagon.

Total Interior Angles

$= 180°(n-2)$

$= 180°(9-2)$

$= 180° \times 7$

$= 1260°$

$180 \times 7 = 1260$

One interior angle of a regular nonagon

$= 1260° \div 9$

$= \underline{\underline{140°}}$

$9 \overline{)1260}$ $= 140$

OR

One exterior angle $= 360° \div 9$

$= 40°$

One interior angle $= 180° - 40°$

$= \underline{\underline{140°}}$

Exercise 1

Calculate the size of the interior angle of any regular decagon.

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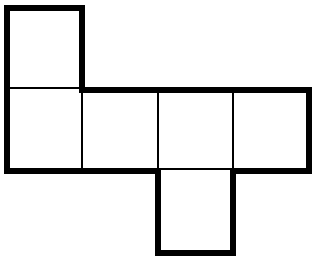
Quiz 2

1) List all the factors of 30.

2) Is the number $3^4 \times 5^2 \times 7^6$ a square number?

3) Solve $3x - 4 = 23$

4) Is the following a net of a cube?



5) What is the mode of the numbers 5, 2, 9, 4, 6, 1, 4, 9, 5, 2, 7, 9?

6) Simplify $2a + 6b + 4a - 2b$

7) What is the area?

8) What is the perimeter?

9) What is the volume of a cube with 4 cm edges?

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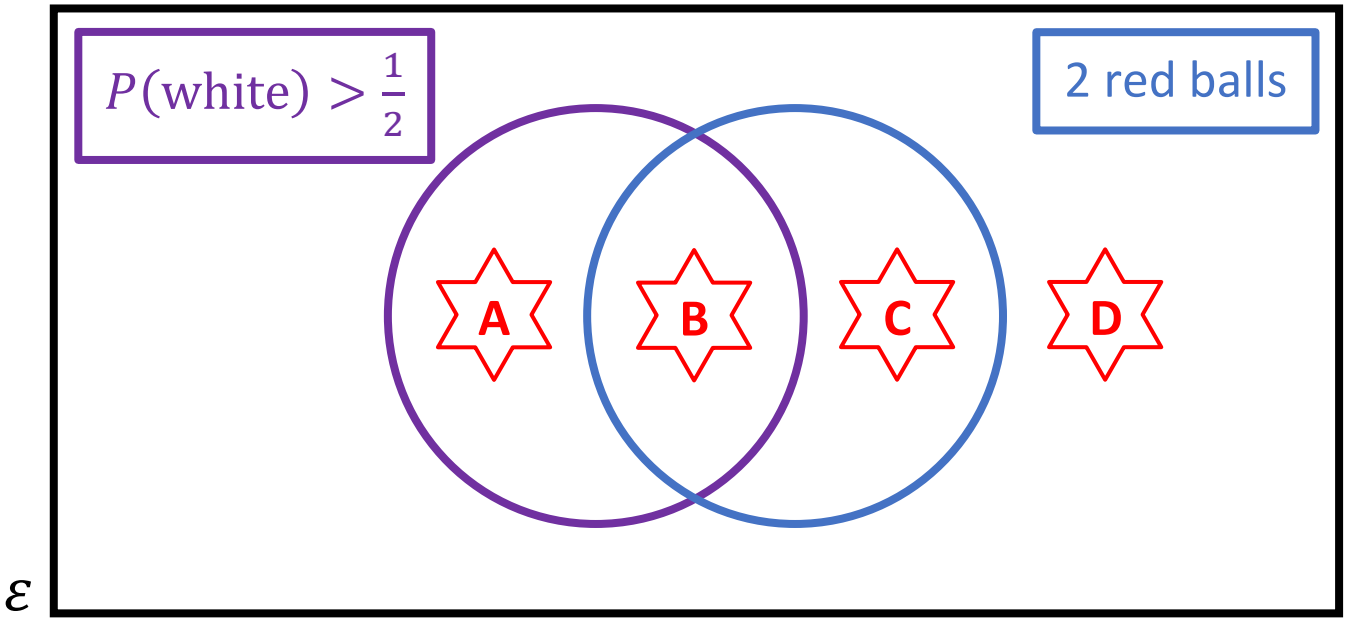
Venn Diagram Challenge 1



A bag contains 10 red, green and white balls – but how many of each colour? Complete the details below, and if you think a region is impossible to fill, explain why!

A

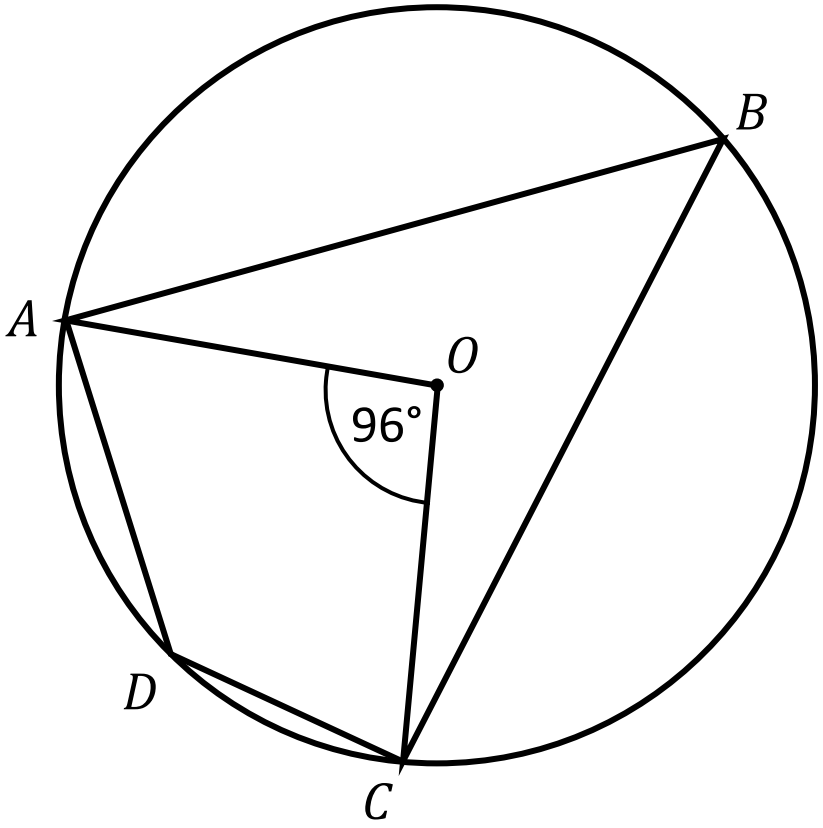
B

C

D

Example 2

Calculate the size of the angles $A\hat{B}C$ and $A\hat{D}C$.



The angle in the centre of a circle is twice the angle on the circumference so $A\hat{B}C = 96° \div 2$

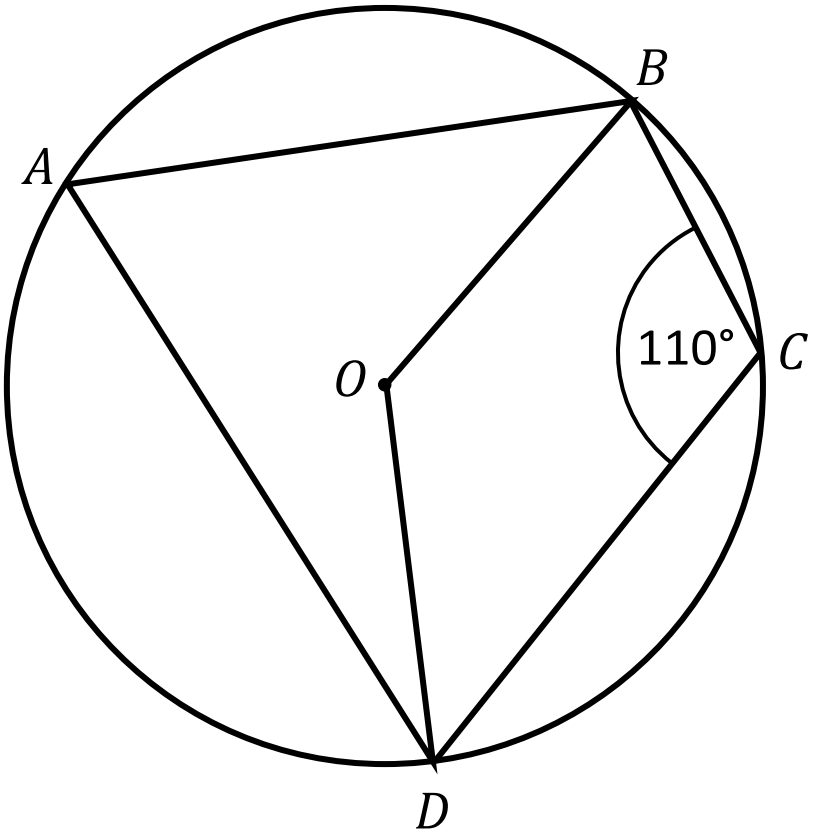
$= 48°$

Opposite angles in a cyclic quadrilateral sum to 180° so $A\hat{D}C = 180° - 48°$

$= 132°$

Exercise 2

Calculate the size of the angles $D\hat{A}B$ and $D\hat{O}B$.



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Quiz 3

1) Share £48 between Deio and Cai according to the ratio 5 : 3.	2) What is the reciprocal of 7?	3) What is the formula for calculating the area of a circle?
4) What is the nth term of the sequence 9, 11, 13, 15, ...?	5) The median of 9, 2, 1, 6, 8	6) Solve $\frac{x}{2} + 1 = 7$
7) Expand $4(x - 4)$	8) 10^2	9) $5 - 2.67$

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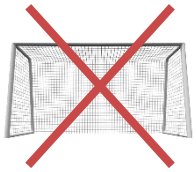
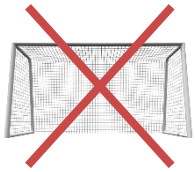


Counters in a Bag



Myrddin has some counters in a bag. 3 of the counters are red, and 7 of the counters are blue. The rest of the counters are green.

Myrddin randomly chooses one counter from the bag.

The probability that Myrddin's counter is green is $\frac{2}{7}$.

What can you calculate using this information?

Example 3

Find the nth term of the sequence 4, 15, 30, 49, 72.

Second difference +4 +4 +4

First difference +11 +15 +19 +23

Original Sequence 4, 15, 30, 49, 72

$4 \div 2 = 2$

n^2 1, 4, 9, 16, 25

$2n^2$ 2, 8, 18, 32, 50

Sequence $-2n^2$ 2, 7, 12, 17, 22

+5 +5 +5 +5

The nth term of the linear sequence is $5n - 3$

The nth term of the quadratic sequence is

$$2n^2 + 5n - 3$$

Exercise 3

Find the nth term of the sequence 9, 20, 37, 60, 89.

___ out of 4

Quiz 4

1) Write the time 9:45 pm using the 24-hour clock.	2) What type of angle is the angle 175°?	3) 5^3
4) The mean of 9, 7, 1, 7, 6	5) The range of 9, 7, 1, 7, 6	6) What is the name of any triangle that has exactly 2 equal angles?
7) 0.037 × 10	8) Write one million in figures.	9) Calculate 30% of £80.

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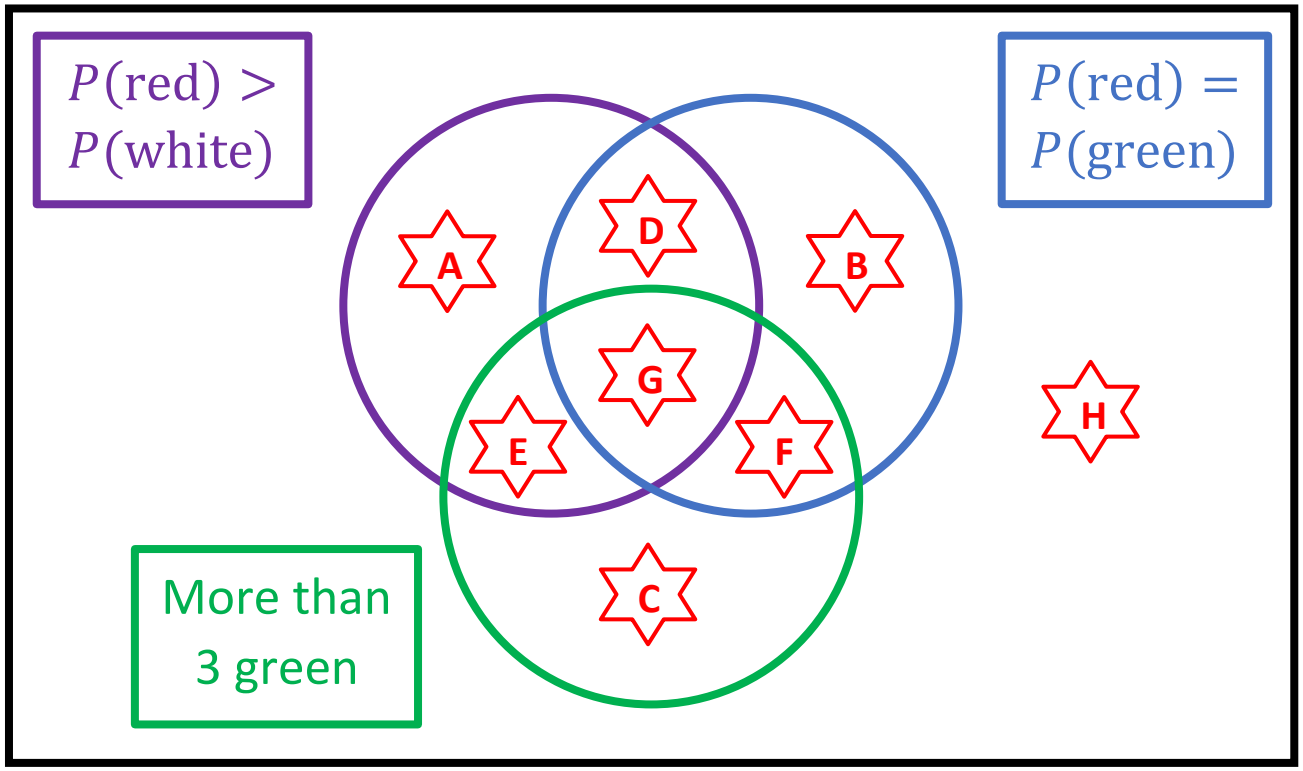
Venn Diagram Challenge 2



A bag contains 10 red, green and white balls – but how many of each colour? Complete the details below, and if you think a region is impossible to fill, explain why!

A

B

C

D

E

F

G

H

Example 4

An aeroplane travels 192 miles in 24 minutes.
How far did it travel in 10 minutes?

Multiplier method:

Time	Distance
24 minutes	192 miles
10 minutes	? miles

$24 \times \frac{192}{24} = 192$ so the answer is $10 \times \frac{192}{24} = 80$ miles

DM Method:

Time	Distance
24 minutes	192 miles
10 minutes	? miles

$10 \div 24 \times 192 = 80$ miles

Exercise 4

The mass of a string of length 24 metres is 288 grams.
What is the mass of 17 metres of the string?

___ out of 2

Quiz 5

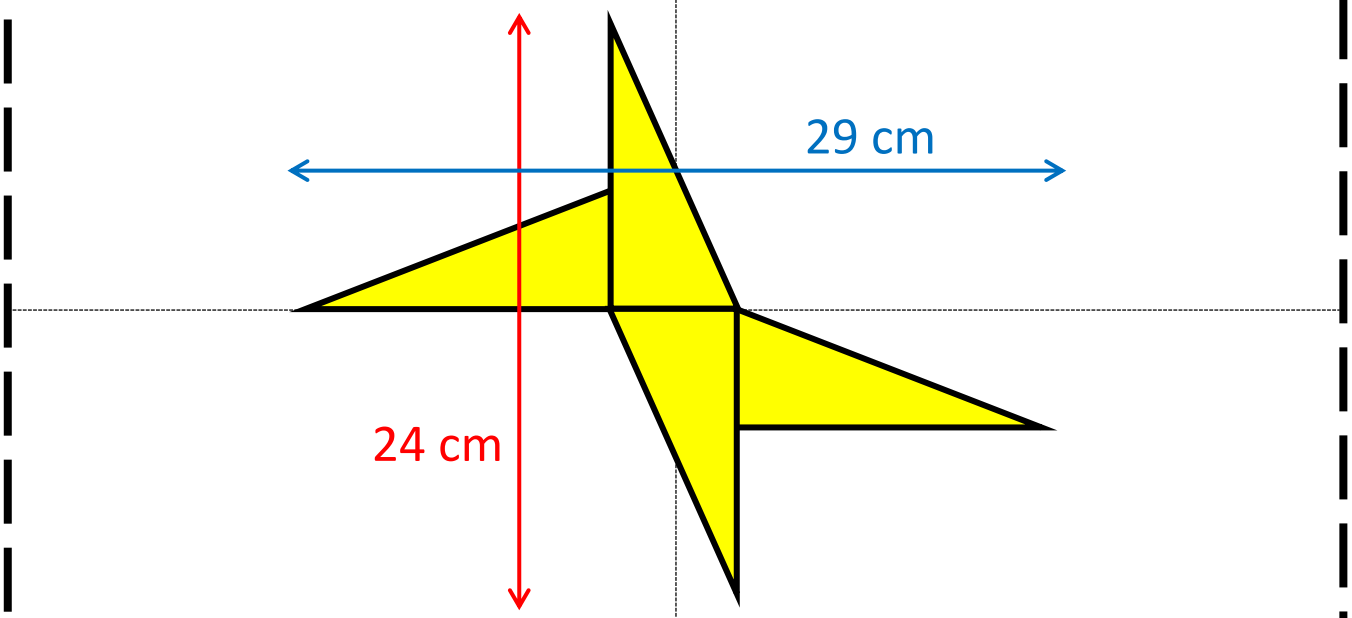
1) $8 + -2$	2) $8 - -2$	3) 8×-2
4) $-8 \div 2$	5) -8×-2	6) $-8 + 2$
7) $-8 - 2$	8) $8 \div -2$	9) 8^2

___ out of 9

The Triangular Logo

1) What is the base and height of one of the yellow triangles?

2) What is the area of one of the yellow triangles?



3) What is the length of the hypotenuse of one of the yellow triangles?

4) What is the perimeter of the triangular logo?

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Evaluating the Workbook

Notes