Year 4 maths – Summer 2 Week 5 beginning: 29.06.20					
Theme	**Geometry Lesson 6 of 7 Completing Symmetrical Figures**	**Geometry Lesson 7 of 7 Sorting Shapes**	**Position and Movement Lesson 1 of 3 Plotting Points**	**Position and Movement Lesson 2 of 3 Describing Movements**	**Position and Movement Lesson 3 of 3 Describing Movements**
Factual fluency (to aid fluency)	**Practise identifying lines of symmetry.**	**Sort these shapes into a Venn diagram.**	**Practise identifying coordinates.**	**Practise reading and plotting coordinates.**	**Use your knowledge of coordinates to create a walking track.**
Problem/ activity of the day **Remember, just like in class, you can still show the depth of your knowledge** LINK	**(Lesson 1 resources below)** **MAKING LINKS:** Last week, we learnt how to identify symmetrical figures. Today we are going to complete symmetrical figures. **THINK: (support below)** Can you help me with this problem? I have a picture of a triangle. If this triangle is half of a shape, what would the whole shape look like? **Our problem is on page 181 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problem are on **pages 181-182** of your **textbook.** VIDEO HERE **DO:** **PART 1 - TEXTBOOK** Look at page 183. Use the line of symmetry to complete these shapes. Look at page 189. Use the line of symmetry to complete the shapes of Q2. **PART 2 – WORKBOOK** Q2 a and b – page 139 Q1 a-d – page 143	**(Lesson 2 resources below)** **MAKING LINKS:** For the past 6 lessons, we have been looking at the different properties of shapes (sides, angles and symmetry). Today, we are going to use these to help us sort different shapes. **THINK: (support below)** Can you help me with this problem? I have selected some random shapes and would like to sort them. What are the different ways we can do this? **Our problem is on page 190 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problem are on **page 191-192** of your **textbook.** **DO:** **PART 1 – TEXTBOOK** Q1 a, b and c – page 193 Q3 – page 193 **PART 2 – WORKBOOK** Q1 and 2 – page 145 Q3 a-d – page 146	**(Lesson 3 resources below)** **MAKING LINKS:** We have been learning to identify properties of shapes and lines of symmetry. Today, we are going to remind ourselves how to plot coordinates on a grid to see what figures we can create. You can see how here. **THINK: (support below)** Can you help me with this problem? Elliott has plotted three points. He has labelled them ABC. Where should he plot D to create a square? Is it possible that ABCD could be a quadrilateral with one line of symmetry? Could ABCD be a rectangle? What if ABCD is a trapezium? **Our problem is on page 205 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problems are on **page 205-207** of your **textbook**. VIDEO HERE **DO:** **PART 1 – TEXTBOOK** **PART 2 – WORKBOOK**	**(Lesson 4 resources below)** **MAKING LINKS:** Yesterday, we reminded ourselves how to plot coordinates on a grid to see what figures we could create. Today, we are going to describe what happens to a figure when it moves from one position to another on a grid. **THINK: (support below)** Can you help me with this problem? How can I describe the movement of the blue triangle into each of the three different positions? **Our problem is on page 209 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problems are on **page 209-210** of your **textbook.** VIDEO HERE **DO:** **PART 1 – TEXTBOOK** Q1 – page 211 **PART 2 – WORKBOOK** Q1 a and b – page 161 Q1 c, d and e – page 162 Q2 a-e – page 163	**Lesson 5 resources below** **MAKING LINKS:** Yesterday, we learnt how to describe what happens to a figure when it moves from one position to another. We are going to consolidate our learning from yesterday and practise moving a rectangle to different positions on a grid. **THINK: (support below)** Can you help me with this problem? How can I move rectangle ABCD so that one of its vertices ends up at (7,8)? **Our problem is on page 213 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problems are on **pages 213-215** of your **textbook**. VIDEO HERE **DO:** **PART 1 – TEXTBOOK** a, b and c – page 215 **PART 2 – WORKBOOK** Q1 a and b – page 164 Q1 c and d – page 165 Q2 a and b – page 165
Methods, tips, clues & checks	**Day 1 resources and answers (below)**	**Day 2 resources and answers (below)**	**Day 3 resources and answers (below)**	**Day 4 resources and answers (below)**	**Day 5 resources and answers (below)**

See below for resources to support you to THINK-SEE-DO

DAY 1 RESOURCES:

THINK:

Look at page 181 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

If this triangle is only half of a shape,
what would the whole shape look like?
Can you use a line of symmetry to help you complete this shape?

DO:

PART 1 – TEXTBOOK

- Look at page 183. Use the line of symmetry to complete these shapes.
- Look at page 189. Use the line of symmetry to complete the shapes of Q2 only.

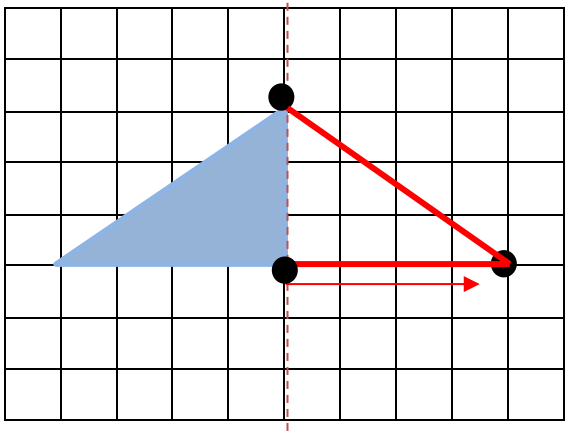
PART 2 – WORKBOOK

- Q2 a and b – page 139
- Q1 a-d – page 143

Top Tip! It would be really helpful to use a mirror to help you solve today's problems. If you don't have a mirror, the screen of a switched off smart phone will do the job just as well!

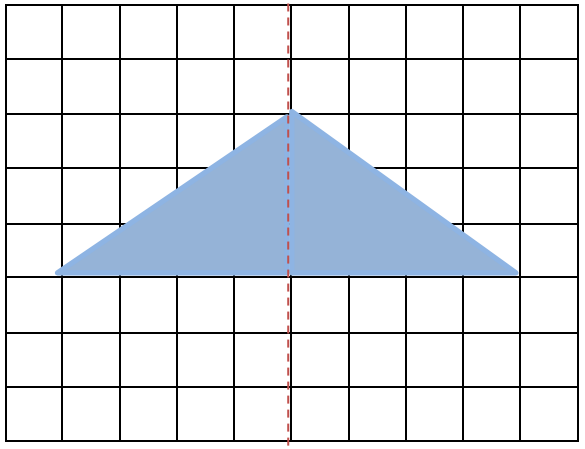
SEE: VIDEO HERE

Line of symmetry



How can we complete this shape?

Draw a dot at the vertex in the bottom right of the triangle, on the mirror line. This will help you to see where you should start drawing. Now draw another dot, 4 units from the mirror line to the right, because the triangle on the other side of the mirror line is drawn 4 units to the left. You can then connect the vertices.



Imagine the line of symmetry is a mirror. The shape on one side of the line needs to be reflected onto the other side.

The grid will help you to see the length it needs to be.

DAY 2 RESOURCES:

THINK:

Look at page 190 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

Look at the shapes on page 190. How could we group these? Think about the properties of shapes which we have looked at in the last week.

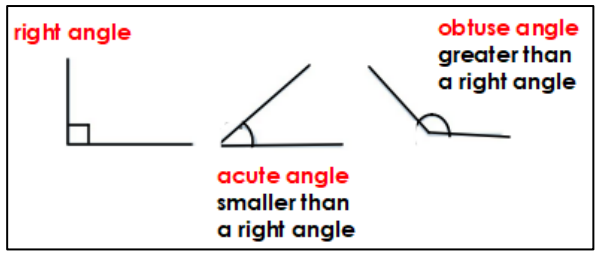
DO:

PART 1 – TEXTBOOK

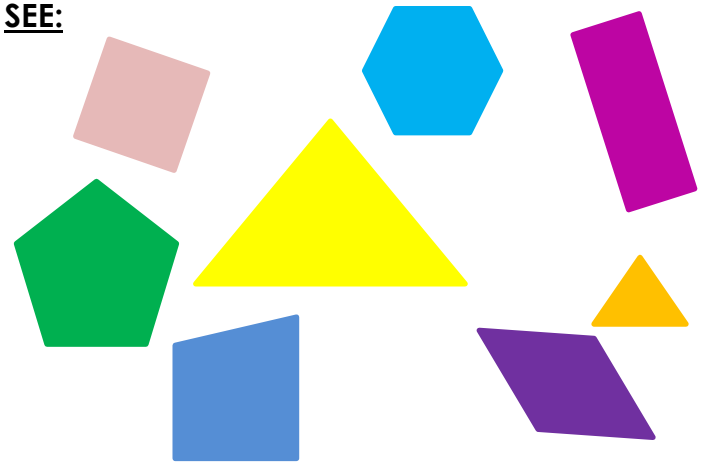
- Q1 a, b and c – page 193
- Q3 – page 193

PART 2 – WORKBOOK

- Q1 and 2 – page 145 (write the letter of the shape)
  Try drawing the lines of symmetry onto the shapes to help find out whether they do have lines of symmetry and how many.
- Q3 a-d – page 146
  Look at the work from last week to help you. Remind yourself about what parallel lines are and about the different types of angles.

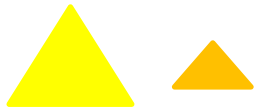


SEE:

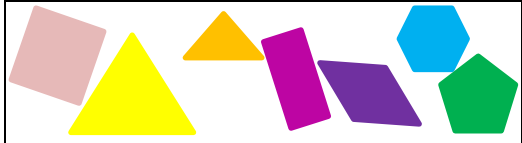


How could we group these shapes (polygons)?

We could group these by the number of sides the shapes have.

Triangles	Quadrilaterals
	

We could group these by whether the shape is symmetrical or not.

Symmetrical	Not symmetrical
	

You could also sort these shapes by the types of angles they have. Do they only have right angles? Or do they also have obtuse and acute angles?

DAY 3 RESOURCES:

THINK: Look at page 205 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

Elliott has plotted three points. He has labelled them ABC.
Where should he plot D to create a square?
Could ABCD be a rectangle?

DO:

PART 1 – TEXTBOOK

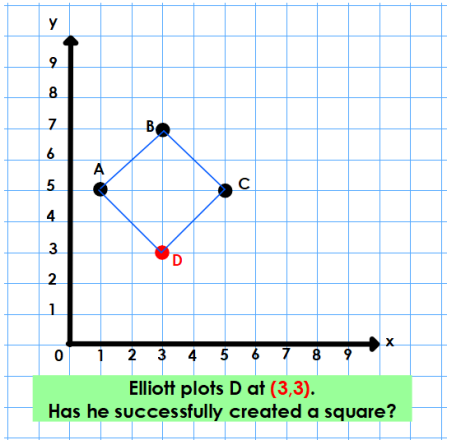
- Q a, b and c – page 208
- Use the graph below or the copy in your textbook to plot these coordinates. What are the names of the quadrilaterals you have created?
- ABCD - A (1,2), B (2,3), C (3,2), D (2,1)
- EFGH – E (1,5), F (3,5), G (4,6), H (2,6)
- JKLM – J (4,10), K (6,9), L (4,8), M (2,9)

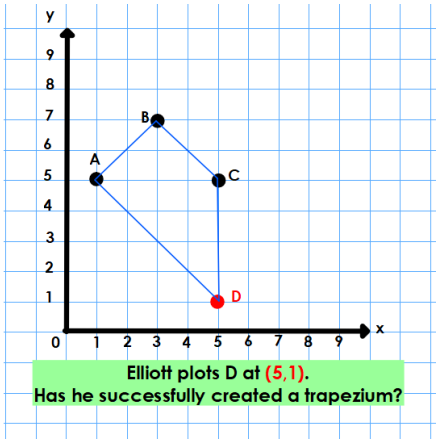
PART 2 – WORKBOOK

- Q1 a-e – pages 159-160.

Remember!
When we are plotting coordinates, we look along the x axis first. Then we look at the y axis. So (x,y) = (number along the x axis, number along the y axis).
(Along the corridor and up the stairs).

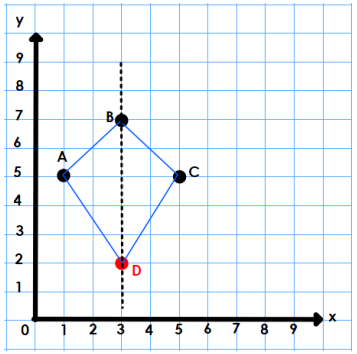
SEE: VIDEO HERE and VIDEO HERE

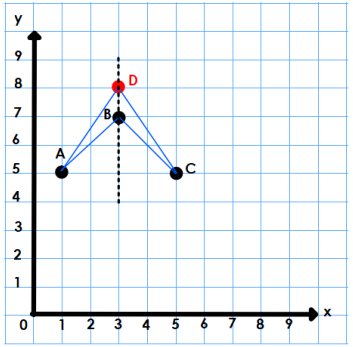




How can we use our knowledge of shapes to prove that Elliott is correct? A square is a quadrilateral with four equal sides and four vertices. A square also has four right angles. A trapezium is also a quadrilateral. It has four sides, four vertices and one pair of parallel lines.

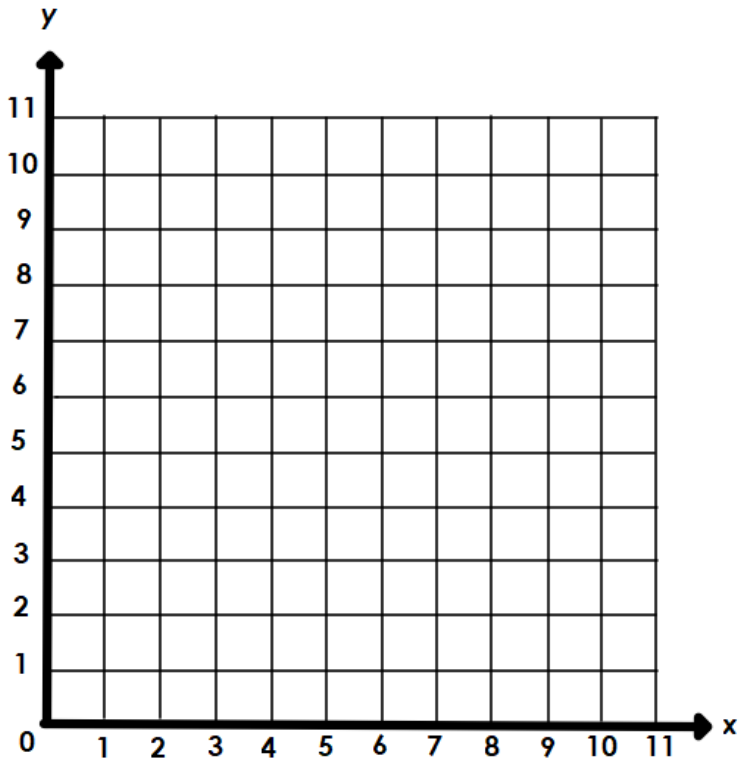
Is it possible that ABCD can have one line of symmetry? Remember each side of the mirror line must be exactly the same.





It is possible that ABCD can have one line of symmetry. Elliott has plotted D at (3,2) and at (3,8) and both sides of the mirror line in these shapes are exactly the same.

Day 3 Resources – Use this grid to complete Part 1



DAY 4 RESOURCES:

THINK:

Look at page 209 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

How can I describe the movement of the blue triangle into each of the three different positions?

DO:

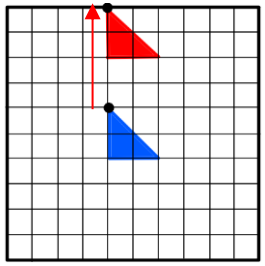
PART 1 – TEXTBOOK

- Q1 – page 211
- Q2 – page 212

PART 2 – WORKBOOK

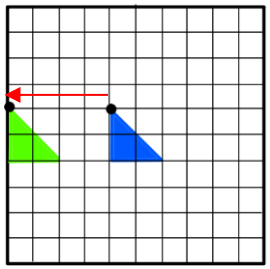
- Q1 a and b – page 161
- Q1 c, d and e – page 162
- Q2 a-e – page 163

SEE: VIDEO HERE



How can I describe how the blue triangle has moved into the position of the red triangle?

The blue triangle has moved up 4 units into the position of the red triangle.

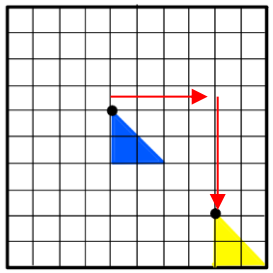


How can I describe how the blue triangle has moved into the position of the green triangle?

The blue triangle has moved 4 units to the left into the position of the green triangle.

Remember: translate means movement on a graph or grid. Draw a dot at one of the vertices to help you translate accurately.

The movement of a figure from one position to another is called a **translation**. We can say that the blue triangle has translated 4 units to the left, into the position of the green triangle.



How can I describe how the blue triangle has moved into the position of the yellow triangle?

The blue triangle translates 4 units to the right. Then it translates 4 units downwards.

DAY 5 RESOURCES:

THINK:

Look at page 213 in your textbook.

Be sure to read the information as many times as you need to help you understand how to solve the problem.

How can I move rectangle ABCD so that one of its vertices ends up at (7,8)?

DO:

PART 1 – TEXTBOOK

- a, b and c – page 215

Use the coordinates to see where the shape has translated to. Then, you can see whether it has translated to the **right**, **left**, **upwards** or **downwards**.

PART 2 – WORKBOOK

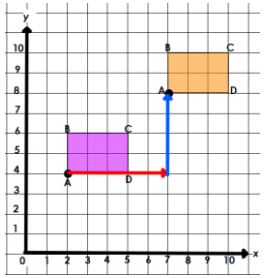
- Q1 a and b – page 164
- Q1 c and d – page 165
- Q2 a and b – page 165

These arrows will help you translate the rectangle accurately.

← left ↑ upwards ↓ downwards right →

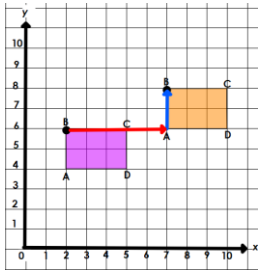
Draw a dot on each vertex to help you translate the shape accurately.

SEE: VIDEO HERE



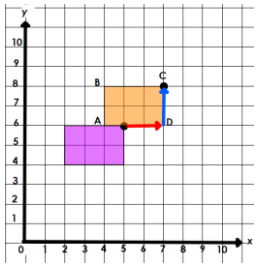
I need to translate the rectangle so that A is at (7,8).

Translate A 5 units to the right.
Then translate A 4 units upwards.



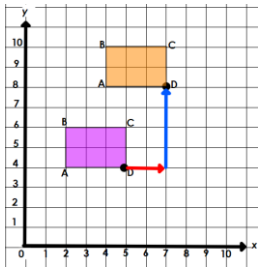
I need to translate the rectangle so that B is at (7,8).

Translate B 5 units to the right.
Then translate B 2 units upwards.



I need to translate the rectangle so that C is at (7,8).

Translate C 2 units to the right.
Then translate C 2 units upwards.



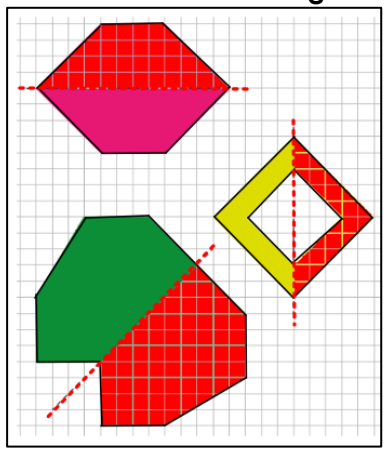
I need to translate the rectangle so that D is at (7,8).

Translate D 2 units to the right.
Then translate D 4 units upwards.

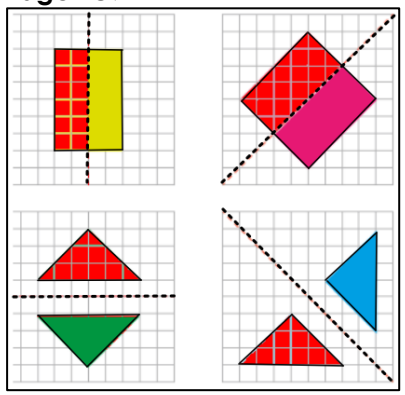
ANSWERS – Part 1 TEXTBOOK:

Day 1

PART 1 – TEXTBOOK – Page 183



Page 189



Day 2

PART 1 – TEXTBOOK

Question 1

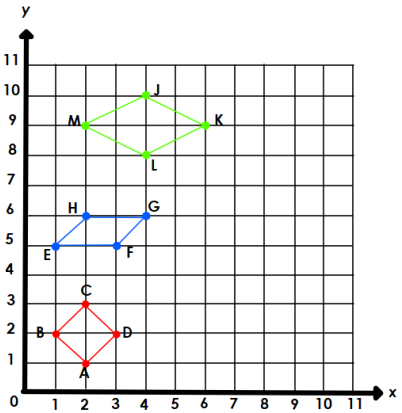
a. C – rectangle
b. A – square
c. G – trapezium or H - triangle

Question 3

has at least 1 right angle	no right angles
A, C, G	B, I, D, E, H, F

Day 3

PART 1 – TEXTBOOK



Day 4

PART 1 – TEXTBOOK

Cathedral – Ancient Ruins
2 units to the right.

Palace – Ancient Ruins
1 unit up.

Palace – Museum
1 unit to the left.

Cathedral to Palace
1 unit down, 2 units to the right.

Museum – Ancient Ruins
1 unit up, 1 unit to the right.

Day 5

PART 1 – TEXTBOOK

a. 3 units downwards and 2 units to the right.

b. 1 unit to the right and 4 units downwards.

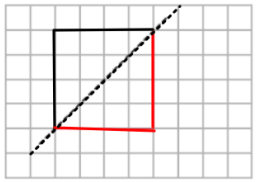
c. 3 units downwards.

ANSWERS – PART 2 WORKBOOK:

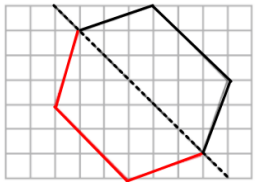
Day 1

Question 2 – Page 139

a.

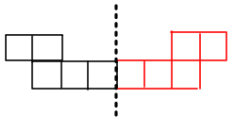


b.

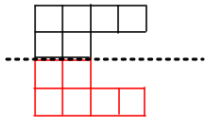


Question 1 – Page 143

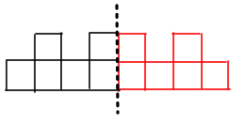
a.



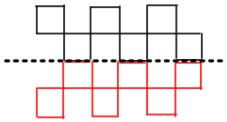
b.



c



d.



Day 2

Question 1

H, F, D

Question 2

I, E, C

Question 3

a.

3 sides	4 sides	more than 4 sides
H, A	D, C, E, F, G	B, I

b.

no parallel sides	1 pair of parallel sides	more than 1 pair of parallel sides
A, B, H	D, G	C, E, F, I

c.

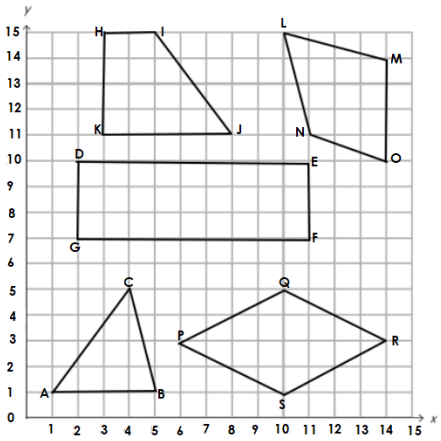
has at least a right angle	no right angle
D, C, E, H	A, B, F, G, I

d.

no obtuse angle	has at least 1 obtuse angle
C, E, H	A, B, D, F, G, I

Day 3

Question 1



a. triangle
b. rectangle
c. trapezium
d. quadrilateral
e. rhombus

Day 4

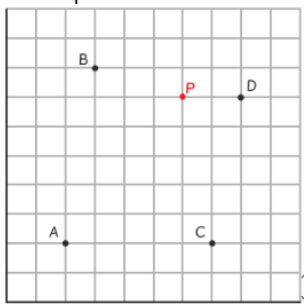
Question 1

a. 1 unit to the right then 6 units upwards.

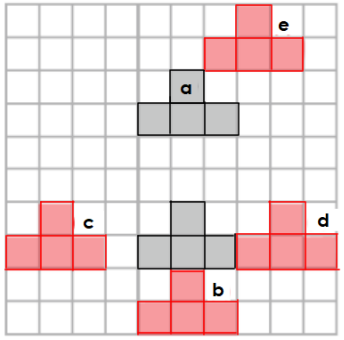
b. 4 units to the right and 6 units downwards.

c. 5 units downwards and 6 units to the left.

d. 5 units to the left and 1 unit upwards.



Question 2



Day 5

Question 1

a. 1 unit to the right and 1 unit downwards.

b. 4 units to the right and 4 units downwards.

c. 5 units to the right and 5 units downwards.

d. 3 units to the right and 3 units downwards.

Question 2

a. 2 units to the right and 2 units downwards.

b. 4 units to the right and 2 units downwards OR 3 units to the right and 4 units downwards.