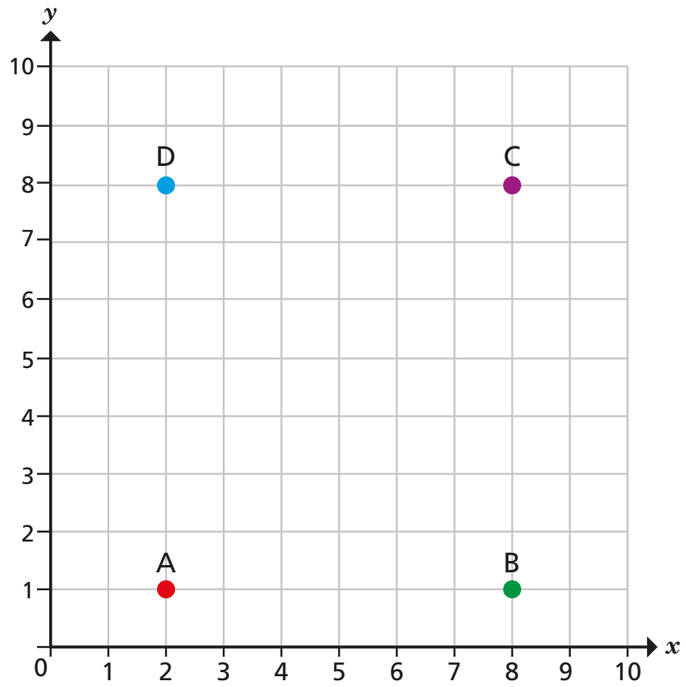
The first quadrant

1



a) Write the coordinates of the points A, B, C and D.

A (☐ , ☐) **C** (☐ , ☐)

B (☐ , ☐) **D** (☐ , ☐)

b) Draw lines to join the points A to D to form a rectangle.

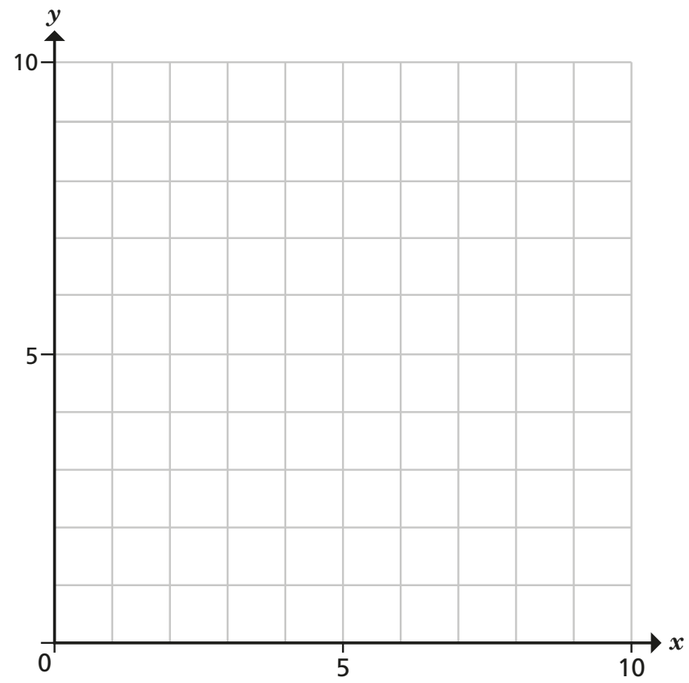
c) Write the coordinates of 4 different points in each column of the table.

Inside the rectangle	Outside the rectangle	On the perimeter of the rectangle
(5, 3)		

2 Here are coordinates for three vertices of a rectangle.

(3, 6) (7, 3) (7, 6)

a) Plot the coordinates.



b) Write the coordinates of the fourth vertex.

(☐ , ☐)

3 Here are coordinates for two vertices of a square.

(5, 2) (5, 6)

What could the coordinates of the other two vertices be?

Give two possible solutions.

(☐ , ☐) and (☐ , ☐)

(☐ , ☐) and (☐ , ☐)

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4 **a)** Write a set of coordinates that would join to make a right-angled triangle.

_____

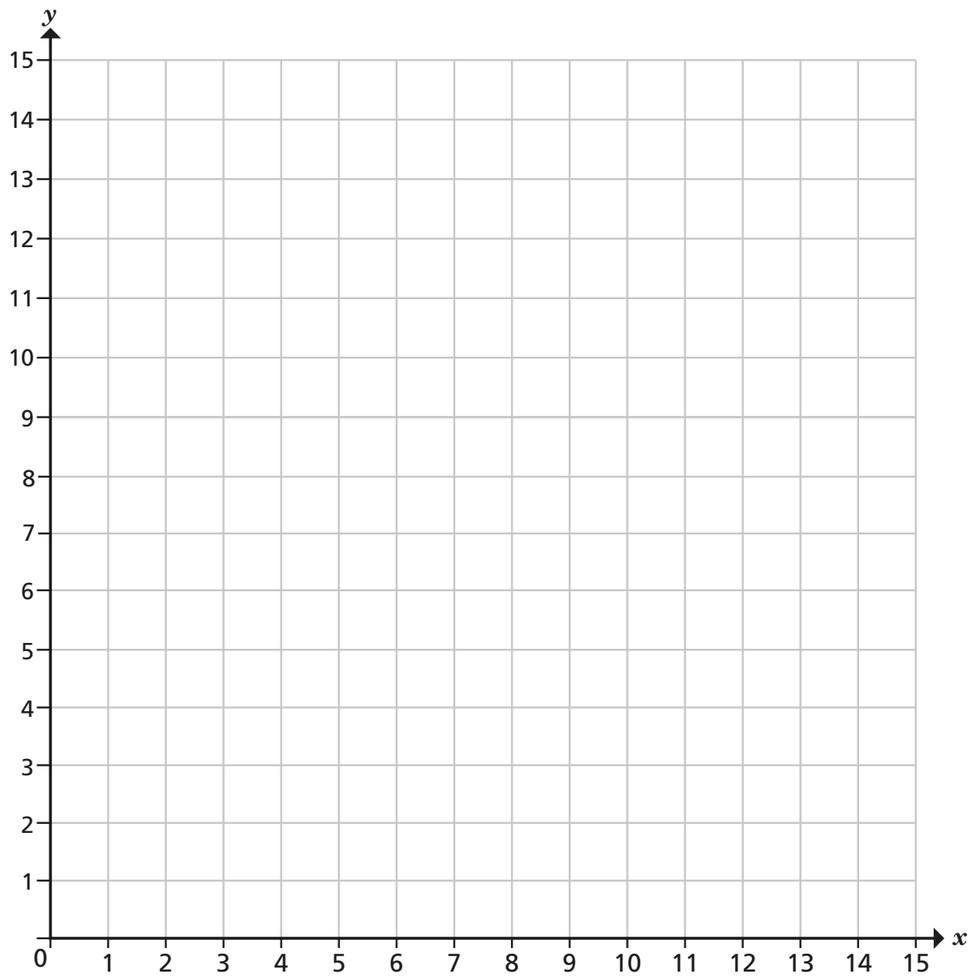
b) Write a set of coordinates that would join to make a pentagon.

_____

c) Write a set of coordinates that would join to make a trapezium.

_____

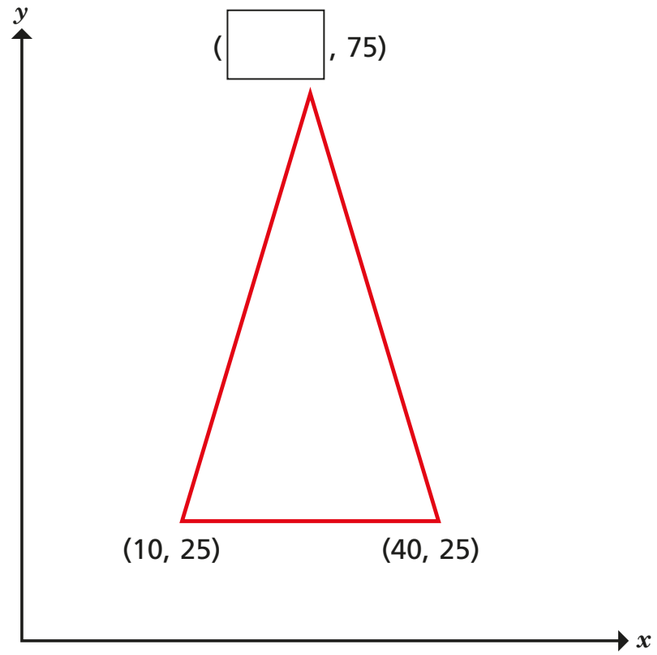
d) Plot your points from parts a), b) and c) to check you are correct.



Compare shapes with a partner.

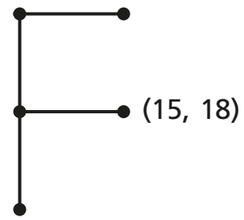
What is the same? What is different?

5 Complete the coordinate for the isosceles triangle.



6 Eva has drawn an F on a coordinate grid. One point is labelled.

Suggest possible values for the other points and label them on the diagram.



Compare answers with a partner.

Is there more than one possible set of answers?

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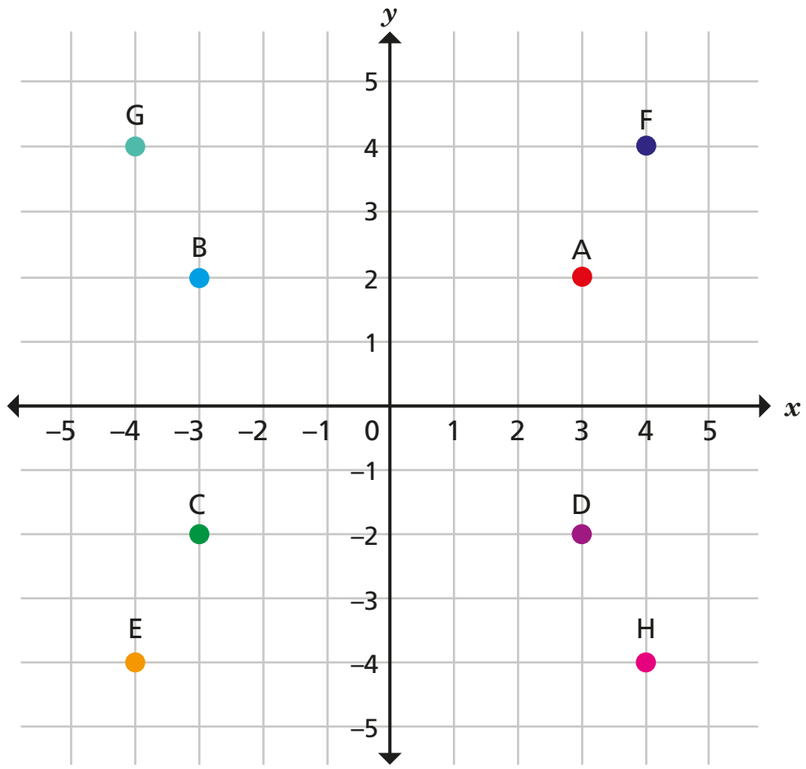
Four quadrants

1



Write the coordinates of points A to H.

A (☐ , ☐)

B (☐ , ☐)

C (☐ , ☐)

D (☐ , ☐)

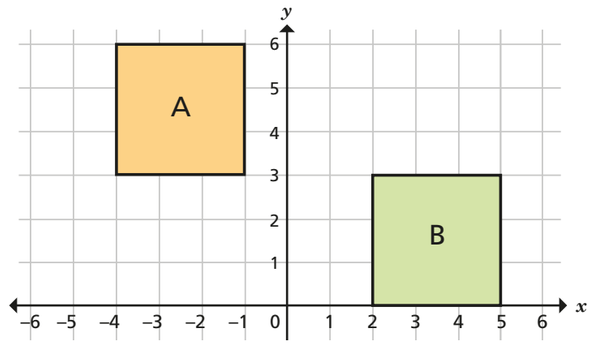
E (☐ , ☐)

F (☐ , ☐)

G (☐ , ☐)

H (☐ , ☐)

2

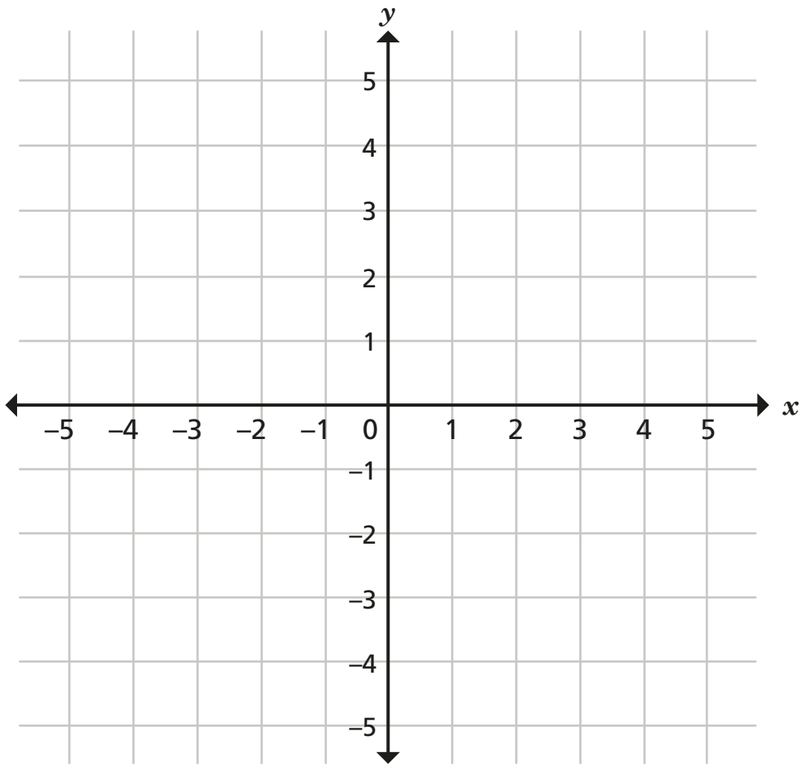


Write the coordinates for each vertex of each square.

square A = _____

square B = _____

3



a) Plot these coordinates.

(–3, 0) (4, 0) (–1, 5) (–1, –5)

b) Join the points you have plotted to form a quadrilateral.

c) Complete the sentence to describe the shape you have drawn.

This quadrilateral is a _____

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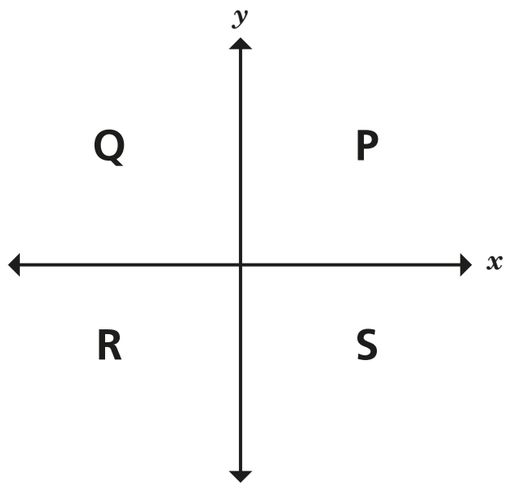
4



a) Write coordinates for 4 possible points in each quadrant.

Quadrant P	Quadrant R
(,) (,) (,) (,)	(,) (,) (,) (,)
Quadrant Q	**Quadrant S**
(,) (,) (,) (,)	(,) (,) (,) (,)

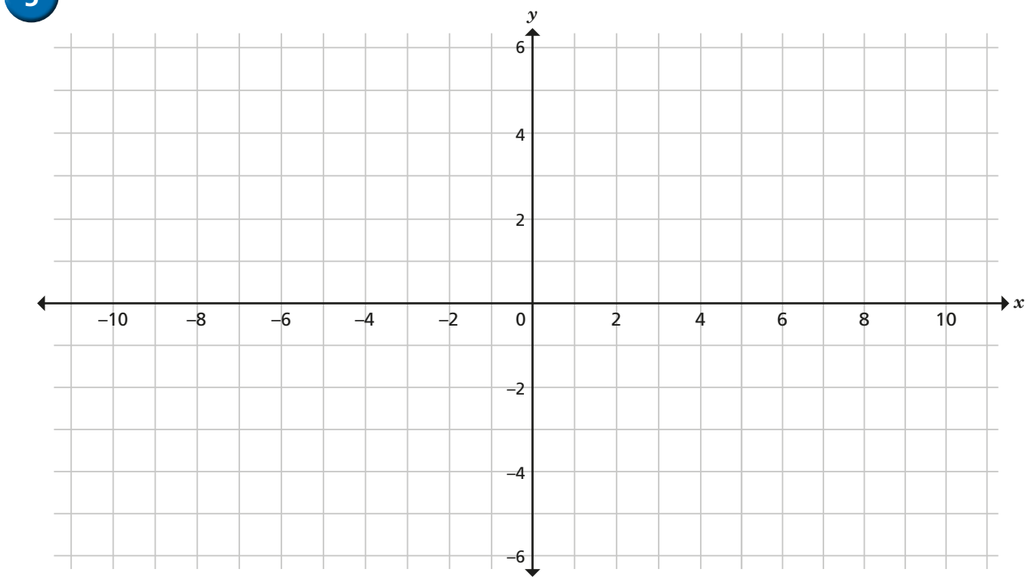
b) Write 4 different coordinates that are not in any single quadrant.

(,) (,)

(,) (,)

What do you notice?

5

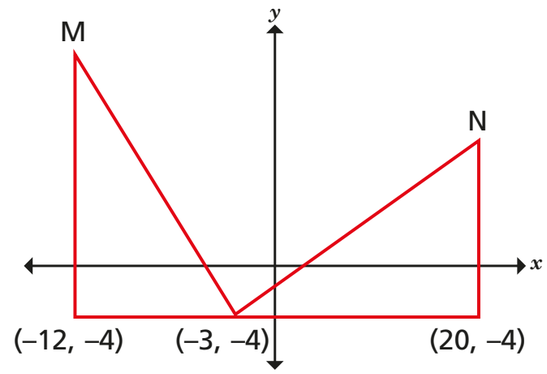


a) Plot these coordinates.

(–8, 4) (4, –2) (10, –5) (–4, 2) (–6, 3)

b) Write three other coordinates that would be in the same line.

6 The diagram shows two identical triangles.



Write the coordinates of points M and N.

M (,) **N** (,)

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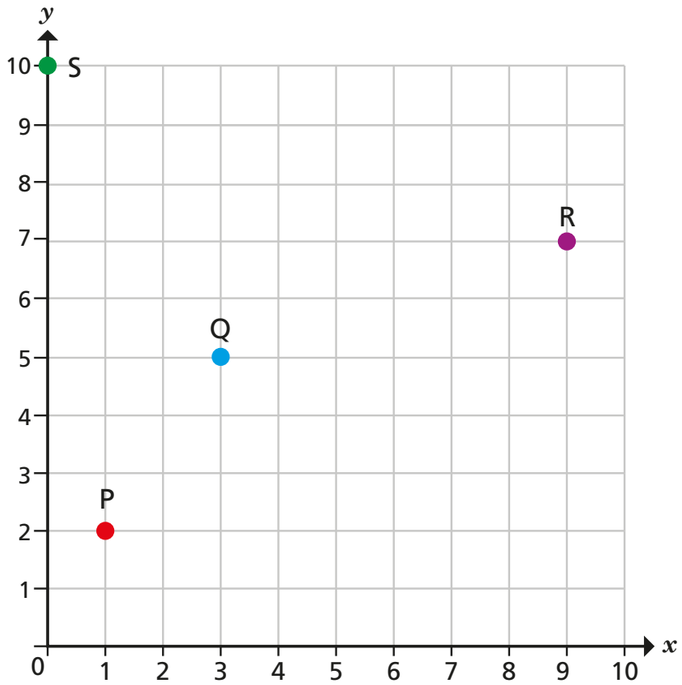
Translations

1



Describe the translations.

a) From P to Q is ☐ right and ☐ up

b) From Q to R is ☐ right and ☐ up

c) From R to S is ☐ left and ☐ up

d) From S to P is ☐ _____ and ☐ _____

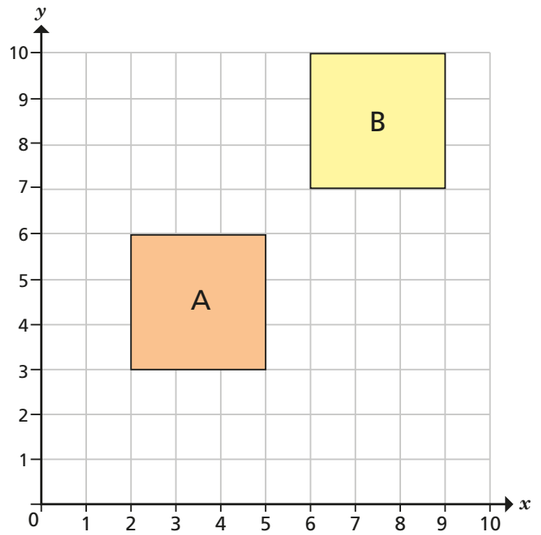
e) From Q to P is ☐ _____ and ☐ _____

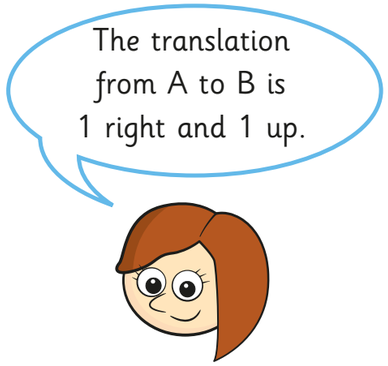
f) From R to Q is ☐ _____ and ☐ _____

g) From S to R is ☐ _____ and ☐ _____

h) From P to S is ☐ _____ and ☐ _____

2





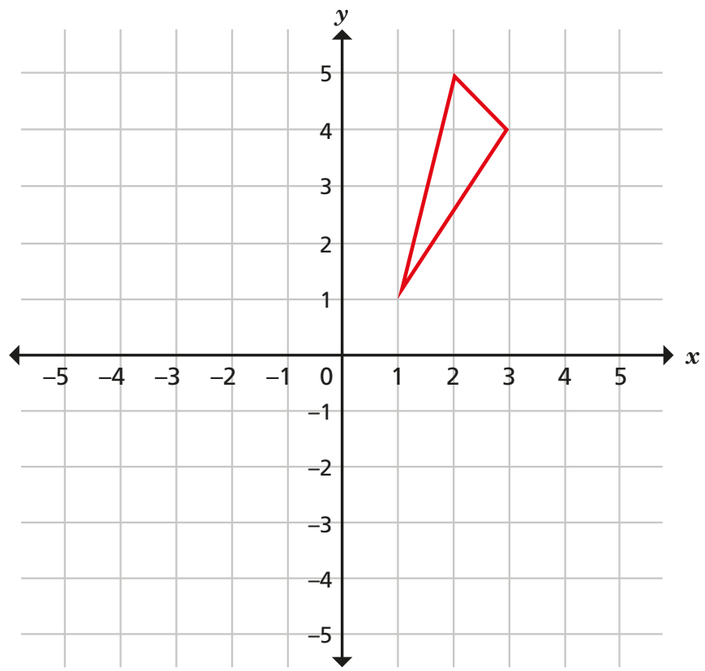
Do you agree with Rosie? _____

Explain your answer.

_____

_____

3 Translate the triangle 6 left.



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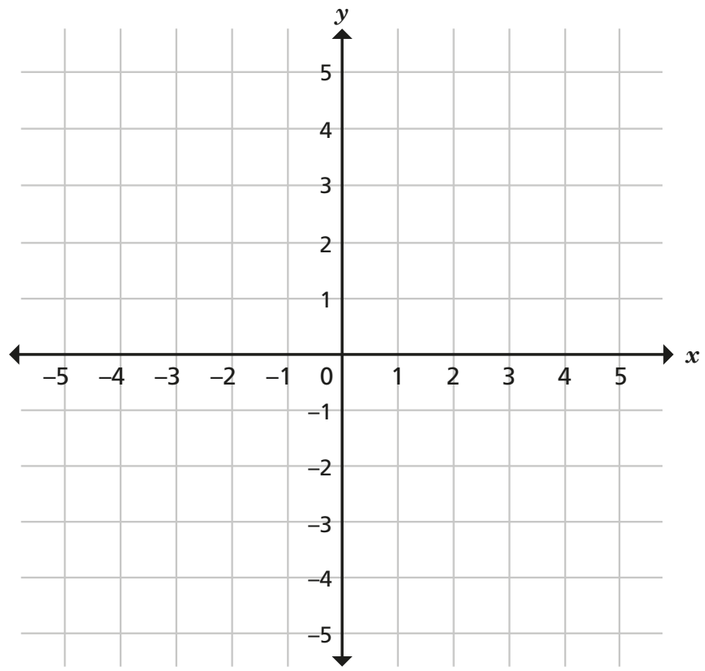
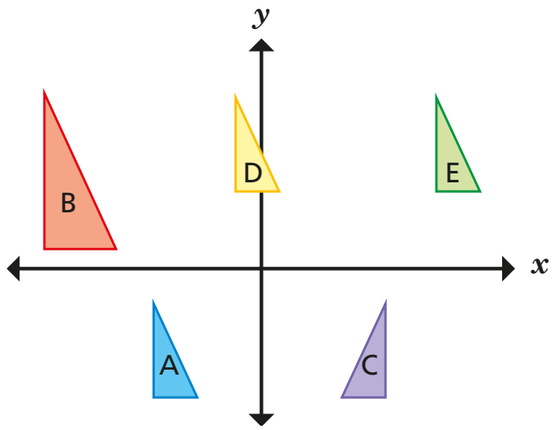
4 These coordinates form a quadrilateral: (–5, 5), (–5, 1), (–1, 4), (–1, 2)

It is translated 3 right and 4 down.

Draw the quadrilateral on the grid in its **new** position.



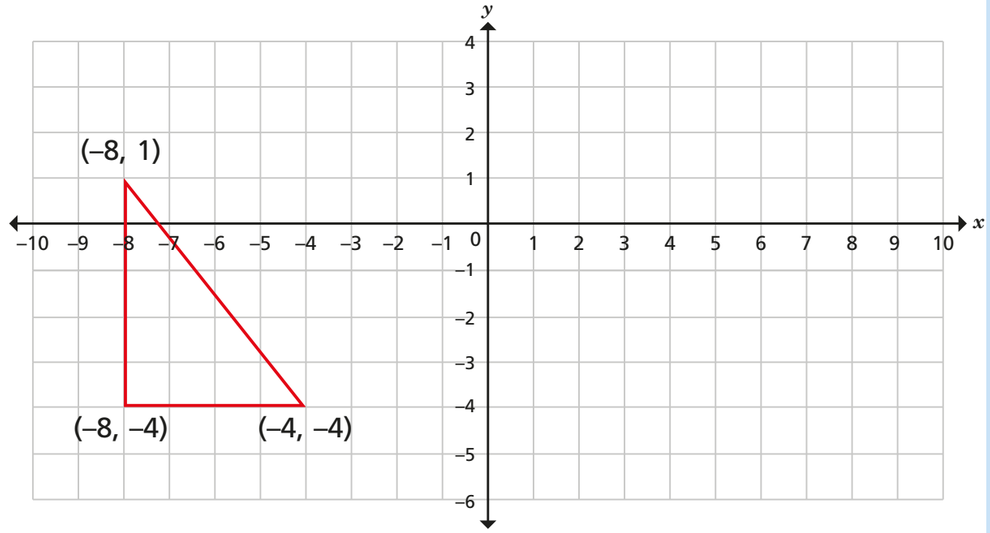
5



Which triangles are translations of each other?

Explain why the others are not translations.

6 A triangle is drawn on the coordinate grid.

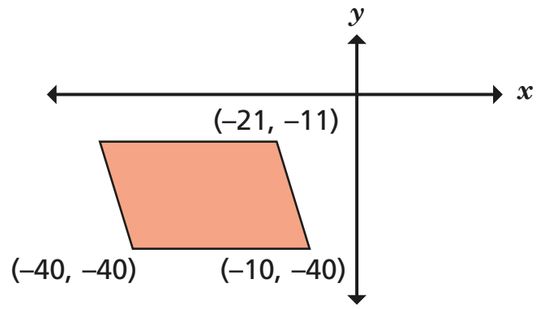


a) Translate the triangle 9 right and 1 down.

b) Tick the correct box for each coordinate.

Point	Inside the new triangle	Outside the new triangle	On the perimeter of the new triangle
(0, 0)			
(4, –5)			
(2, –1)			
(–6, –3)			
(3, –4)			

7



This parallelogram has been translated 50 left and 25 down.

What were the coordinates of **all four** vertices before it was translated?

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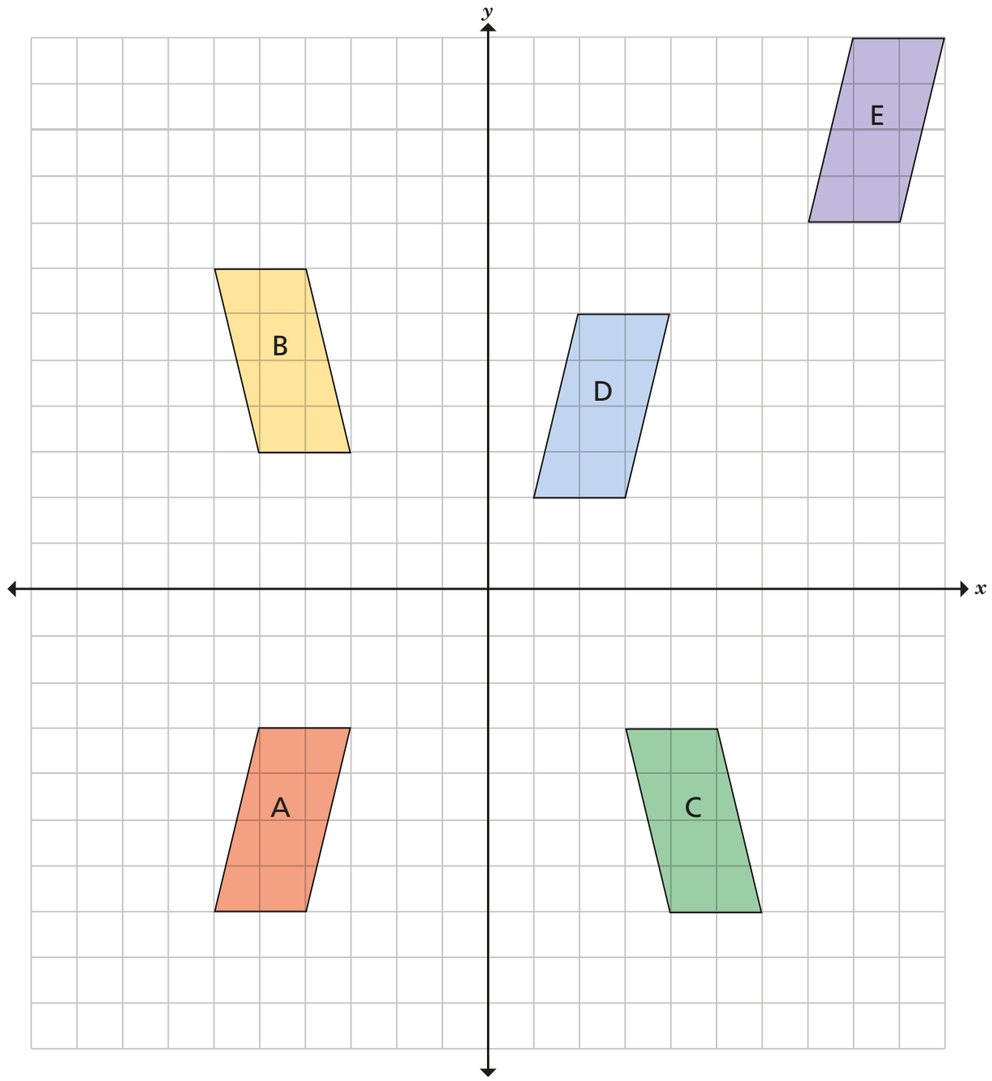
Reflections

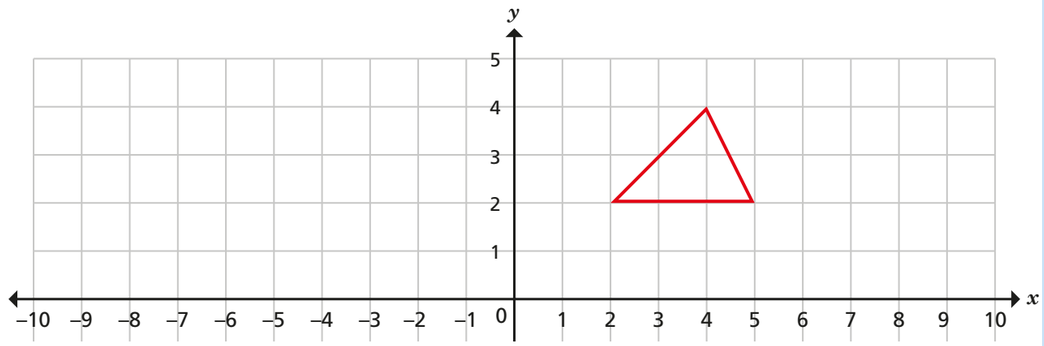
1 Five parallelograms are shown on the coordinate grid.



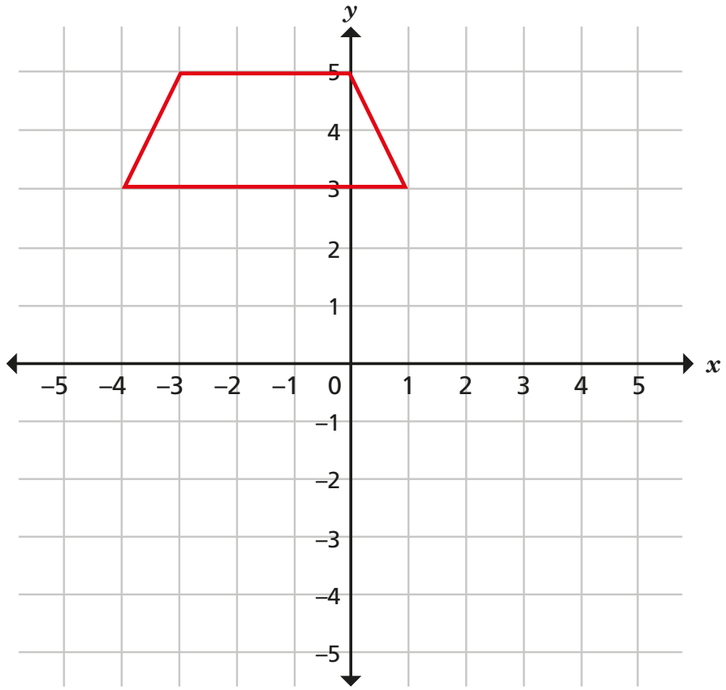
a) Tick the shapes that are translations of shape A.

b) Circle the shapes that are reflections of shape A.

2 Reflect the triangle in the y-axis.



3



a) What is the name of the shape plotted on the grid?

_____

b) Reflect the shape in the x-axis.

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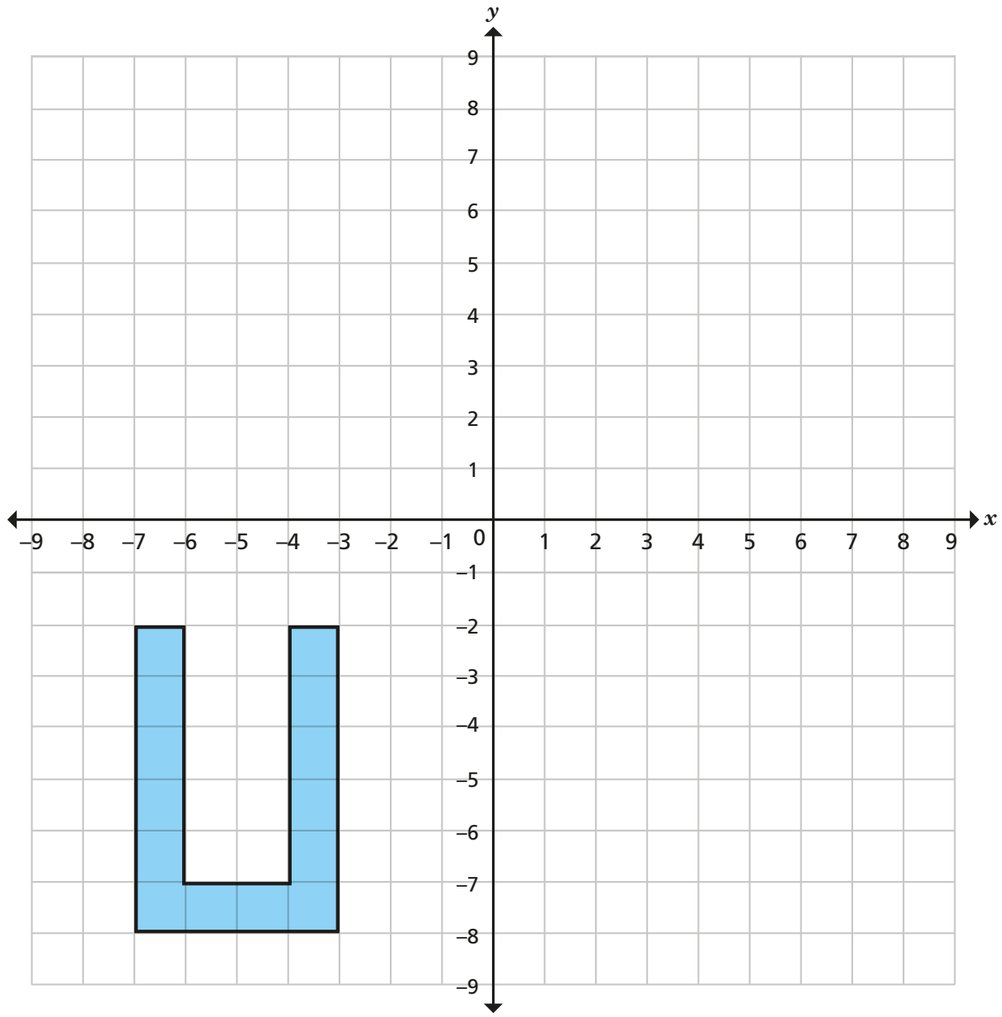
4 An octagon is shown on the coordinate grid.



a) Reflect the shape in the x-axis.

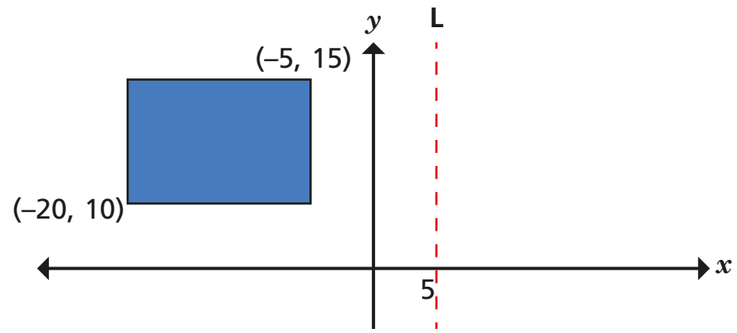
b) Translate the new shape 10 right and 10 down.

c) Reflect the new shape in the x-axis.

d) What do you notice?

e) Create a similar question for your partner to complete.

5 The shape is reflected in the line marked L.



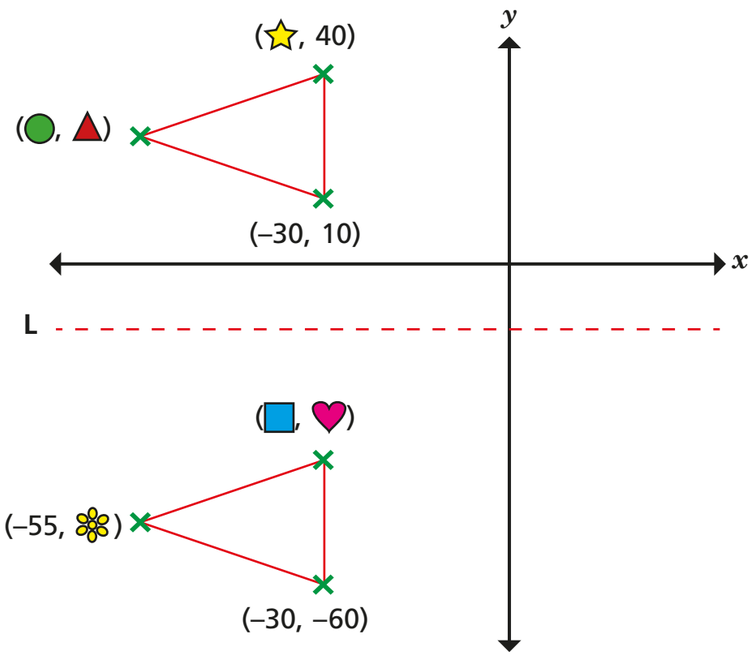
Work out the coordinates of the new vertices.

The new vertices are at

(☐ , ☐) (☐ , ☐) (☐ , ☐) (☐ , ☐)

6 The isosceles triangle has been reflected in the line marked L.

Work out the missing values.



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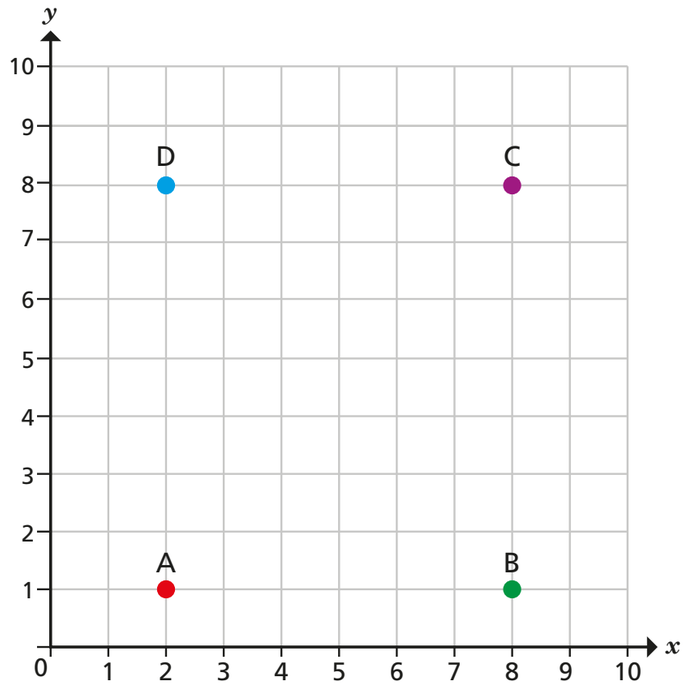
The first quadrant

1



a) Write the coordinates of the points A, B, C and D.

A (2 , 1) C (8 , 8)

B (8 , 1) D (2 , 8)

b) Draw lines to join the points A to D to form a rectangle.

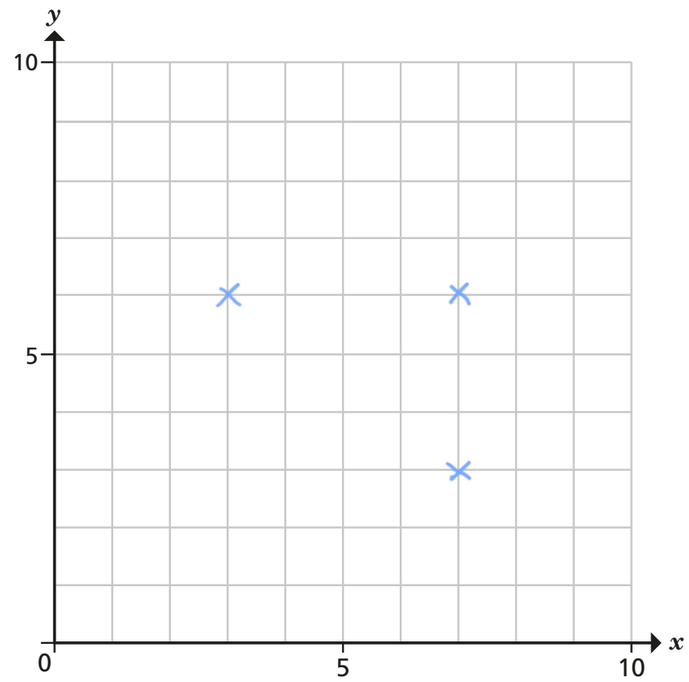
c) Write the coordinates of 4 different points in each column of the table. Various answers.

Inside the rectangle	Outside the rectangle	On the perimeter of the rectangle
(5, 3)		

2 Here are coordinates for three vertices of a rectangle.

(3, 6) (7, 3) (7, 6)

a) Plot the coordinates.



b) Write the coordinates of the fourth vertex.

(3 , 3)

3 Here are coordinates for two vertices of a square.

(5, 2) (5, 6)

What could the coordinates of the other two vertices be?

Give two possible solutions.

(9 , 2) and (9 , 6)

(1 , 2) and (1 , 6)

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Various answers.

4 **a)** Write a set of coordinates that would join to make a right-angled triangle.

(1,14) (4,14) (1,11)

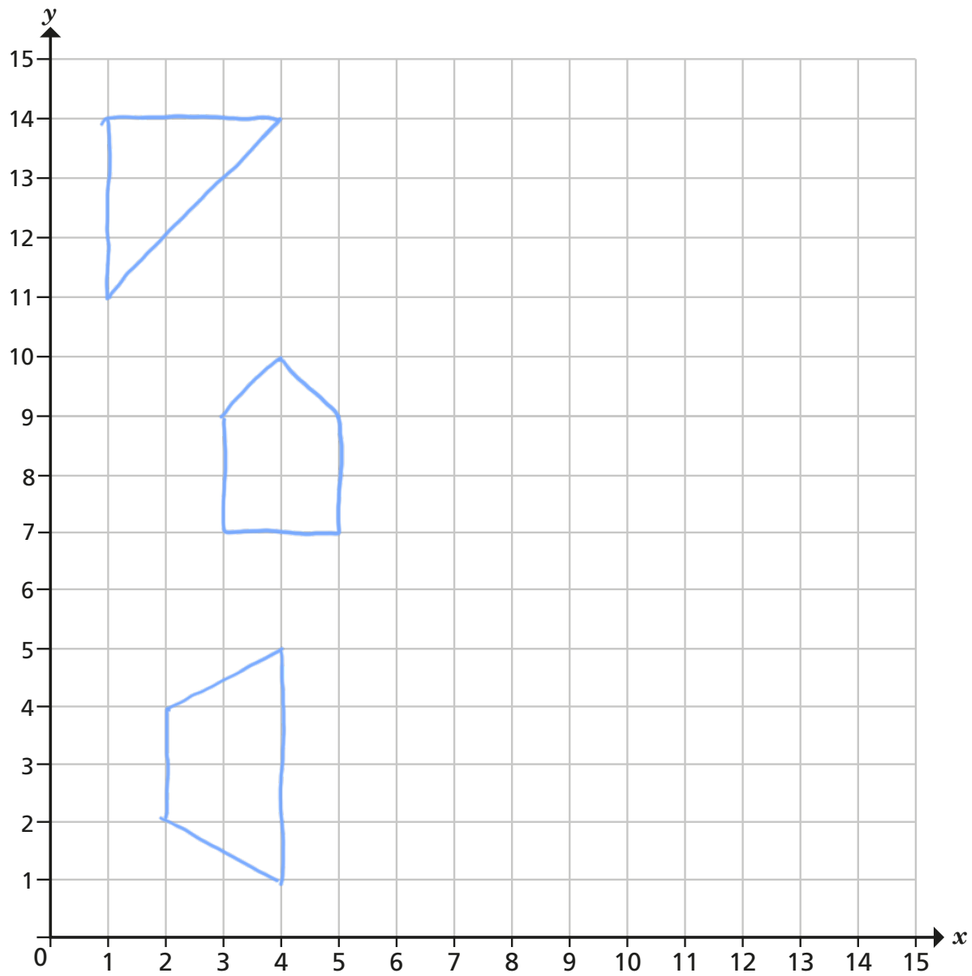
b) Write a set of coordinates that would join to make a pentagon.

(4,10) (3,9) (5,9) (3,7) (5,7)

c) Write a set of coordinates that would join to make a trapezium.

(4,1) (2,2) (2,4) (4,5)

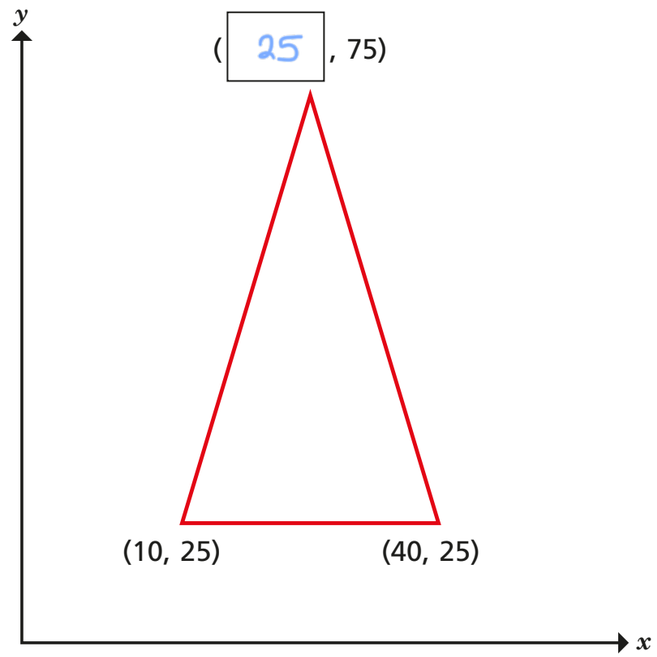
d) Plot your points from parts a), b) and c) to check you are correct.



Compare shapes with a partner.

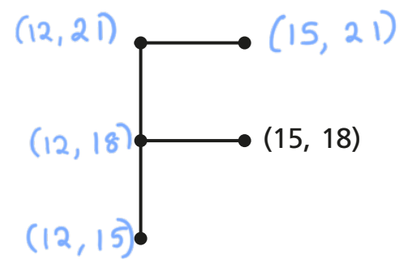
What is the same? What is different?

5 Complete the coordinate for the isosceles triangle.



6 Eva has drawn an F on a coordinate grid. One point is labelled.

Suggest possible values for the other points and label them on the diagram. Various answers e.g.



Compare answers with a partner.

Is there more than one possible set of answers?

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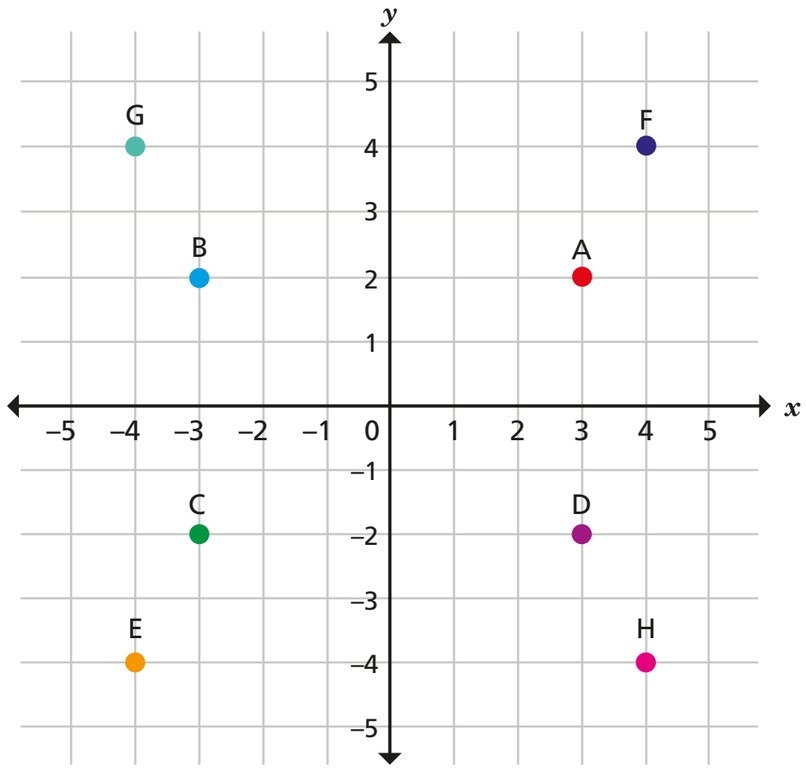
Four quadrants

1



Write the coordinates of points A to H.

A (3 , 2)

B (-3 , 2)

C (-3 , -2)

D (3 , -2)

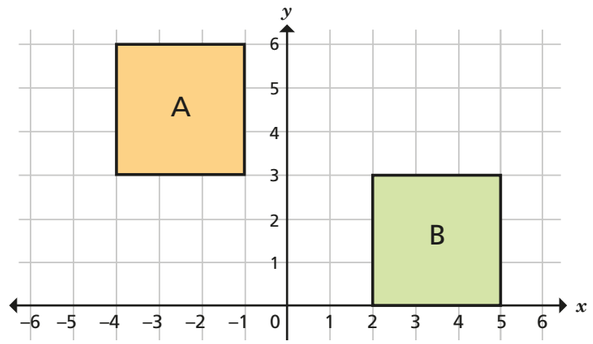
E (-4 , -4)

F (4 , 4)

G (-4 , 4)

H (4 , -4)

2

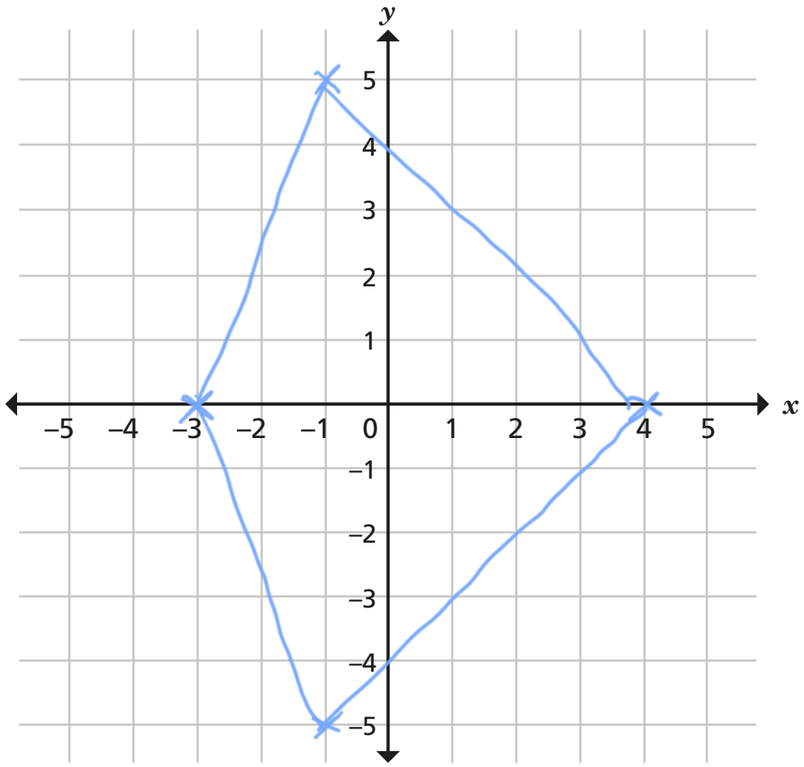


Write the coordinates for each vertex of each square.

square A = (-4,6) (-1,6) (-1,3) (-4,3)

square B = (2,3) (5,3) (2,0) (5,0)

3



a) Plot these coordinates.

(–3, 0) (4, 0) (–1, 5) (–1, –5)

b) Join the points you have plotted to form a quadrilateral.

c) Complete the sentence to describe the shape you have drawn.

This quadrilateral is a kite

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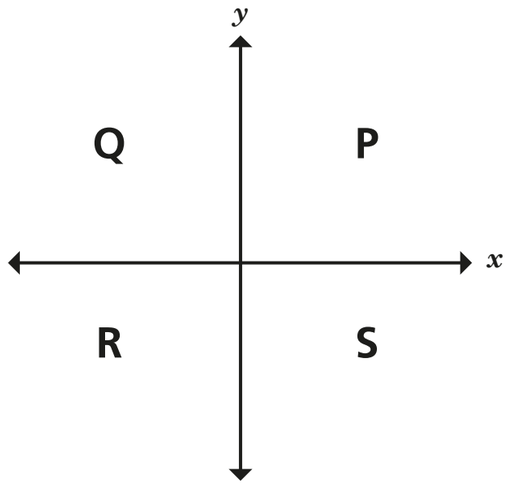
4



Various answers.

a) Write coordinates for 4 possible points in each quadrant.

Quadrant P		Quadrant R	
(2, 4)	(71, 60)	(-4, -11)	(-1, -1)
(3, 1)	(5, 17)	(-19, -27)	(-8, -9)
Quadrant Q		**Quadrant S**	
(-7, 11)	(-4, 1)	(2, -5)	(30, -4)
(-5, 21)	(-100, 2)	(17, -12)	(6, -1)

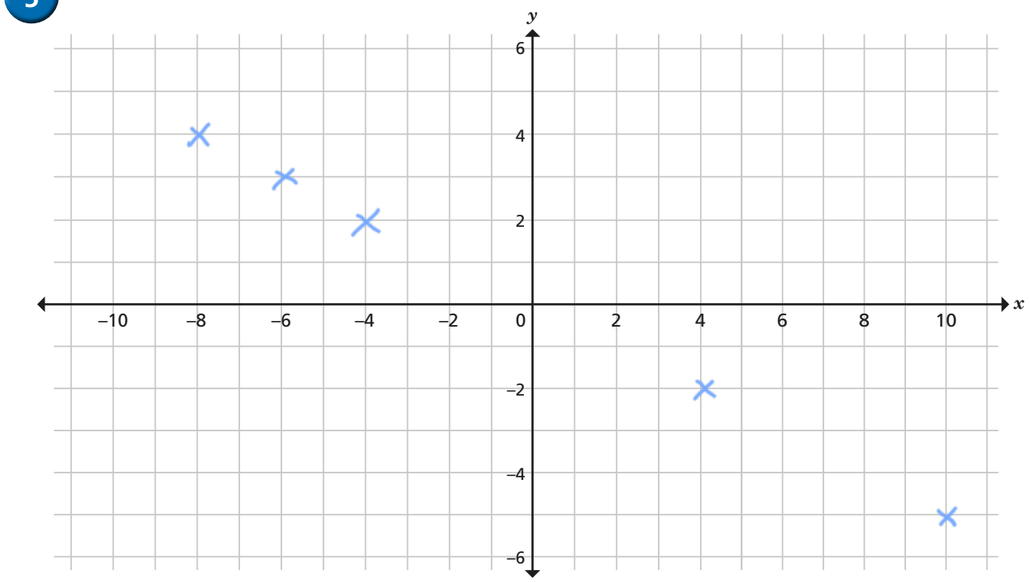
b) Write 4 different coordinates that are not in any single quadrant.

(3, 0) (0, 0)

(0, 4) (-7, 0)

What do you notice?

5



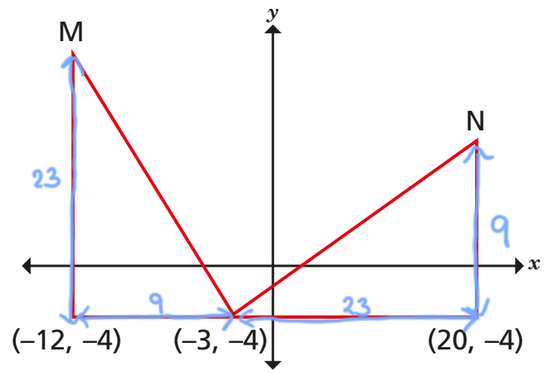
a) Plot these coordinates.

(–8, 4) (4, –2) (10, –5) (–4, 2) (–6, 3)

b) Write three other coordinates that would be in the same line.

(-2, 1) (0, 0) (2, -1)

6 The diagram shows two identical triangles.



Write the coordinates of points M and N.

M (-12, 19) **N** (20, 5)

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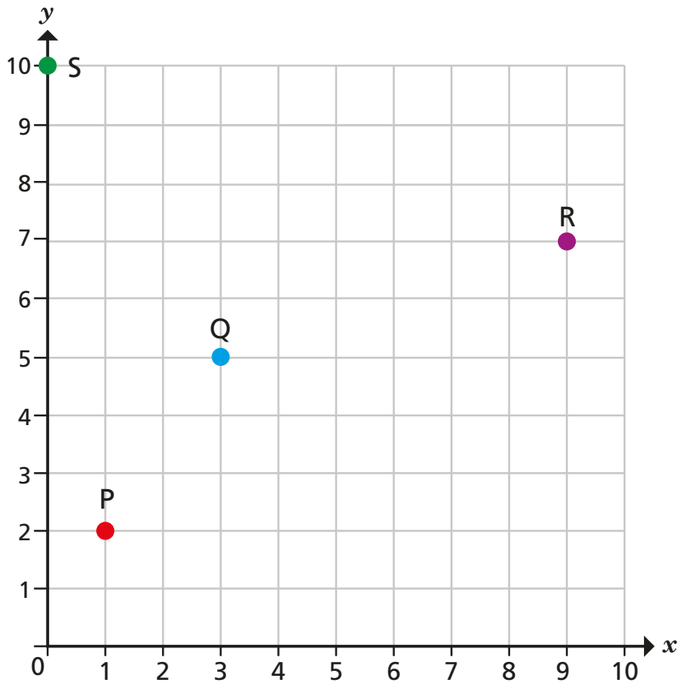
Translations

1



Describe the translations.

a) From P to Q is [2] right and [3] up

b) From Q to R is [6] right and [2] up

c) From R to S is [9] left and [3] up

d) From S to P is [1] right and [8] down

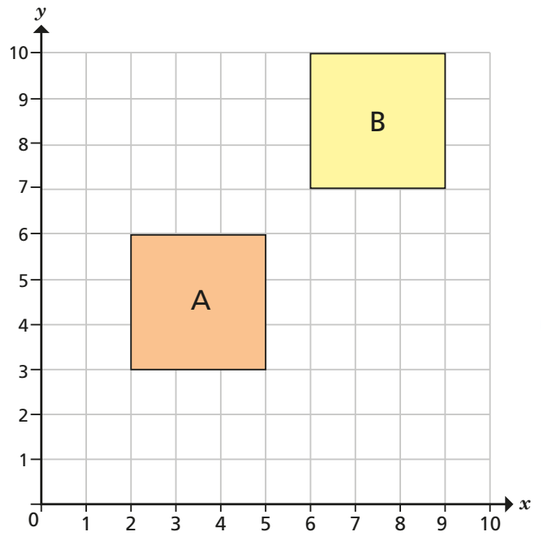
e) From Q to P is [2] left and [3] down

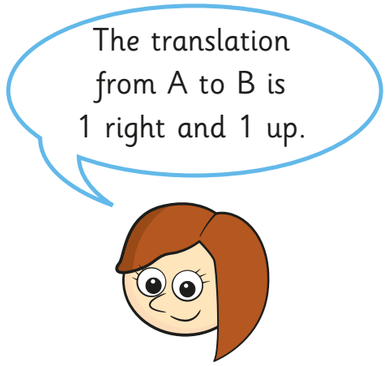
f) From R to Q is [6] left and [2] down

g) From S to R is [9] right and [3] down

h) From P to S is [1] left and [8] up

2



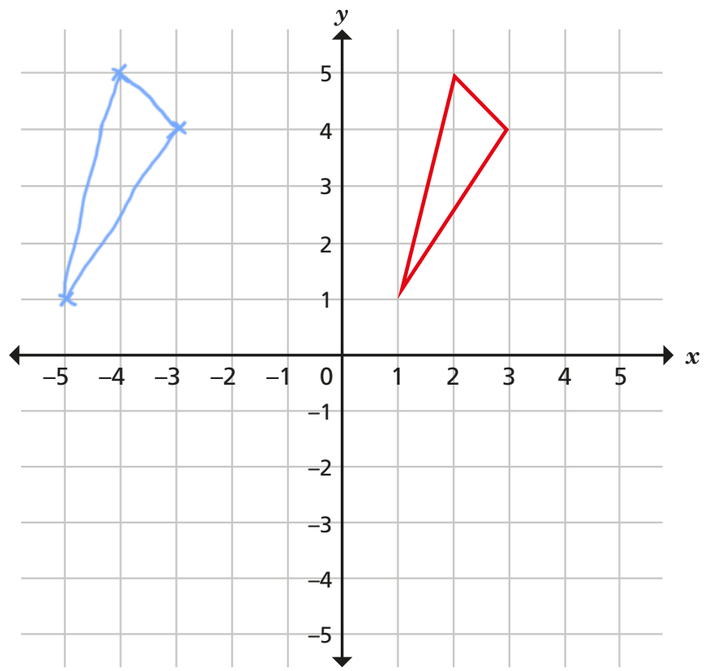


Do you agree with Rosie? No

Explain your answer.

She has looked at the corners closest to each other not the corresponding corners on each shape.

3 Translate the triangle 6 left.



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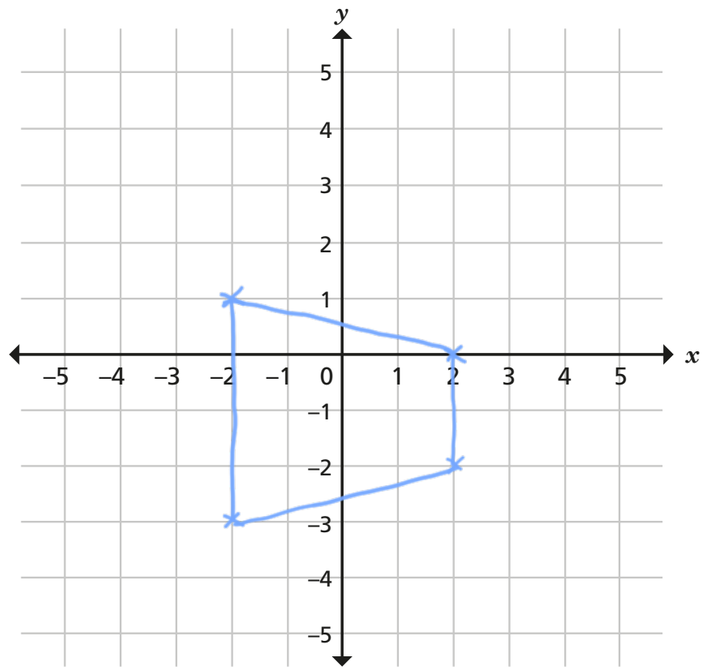
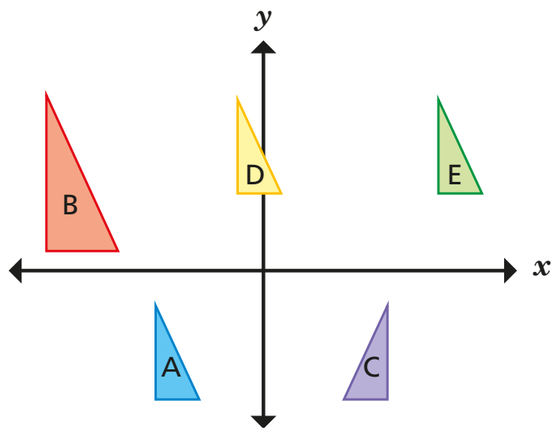
4 These coordinates form a quadrilateral: (–5, 5), (–5, 1), (–1, 4), (–1, 2)

It is translated 3 right and 4 down.

Draw the quadrilateral on the grid in its **new** position.



5

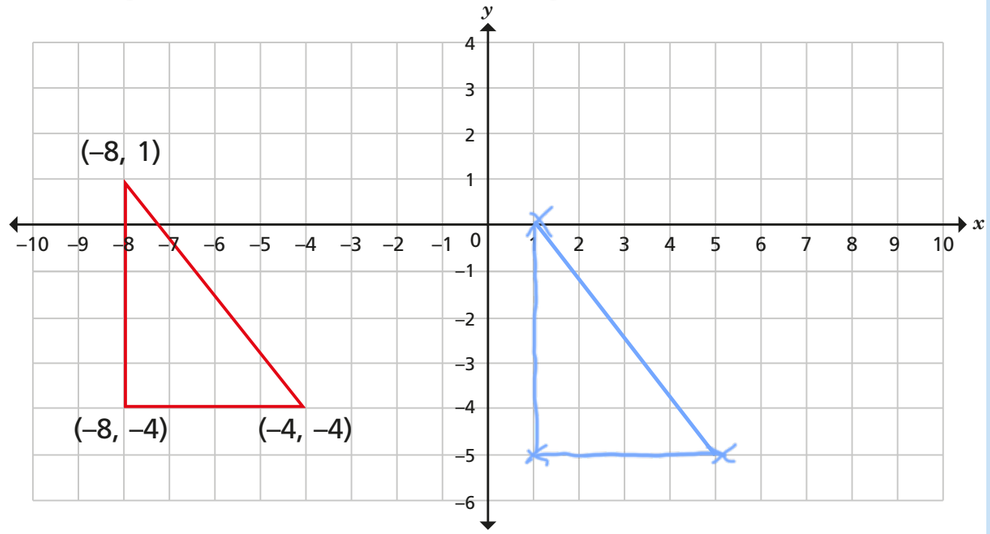


Which triangles are translations of each other?

A, D and E

Explain why the others are not translations.

6 A triangle is drawn on the coordinate grid.

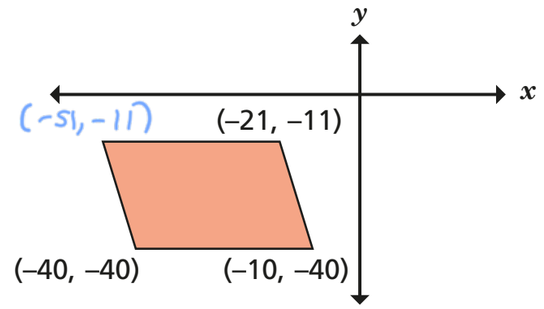


a) Translate the triangle 9 right and 1 down.

b) Tick the correct box for each coordinate.

Point	Inside the new triangle	Outside the new triangle	On the perimeter of the new triangle
(0, 0)		✓	
(4, –5)			✓
(2, –1)		✓	
(–6, –3)		✓	
(3, –4)	✓		

7



This parallelogram has been translated 50 left and 25 down.

What were the coordinates of **all four** vertices before it was translated?

(–1, 14) (29, 14) (10, –15) (40, –15)

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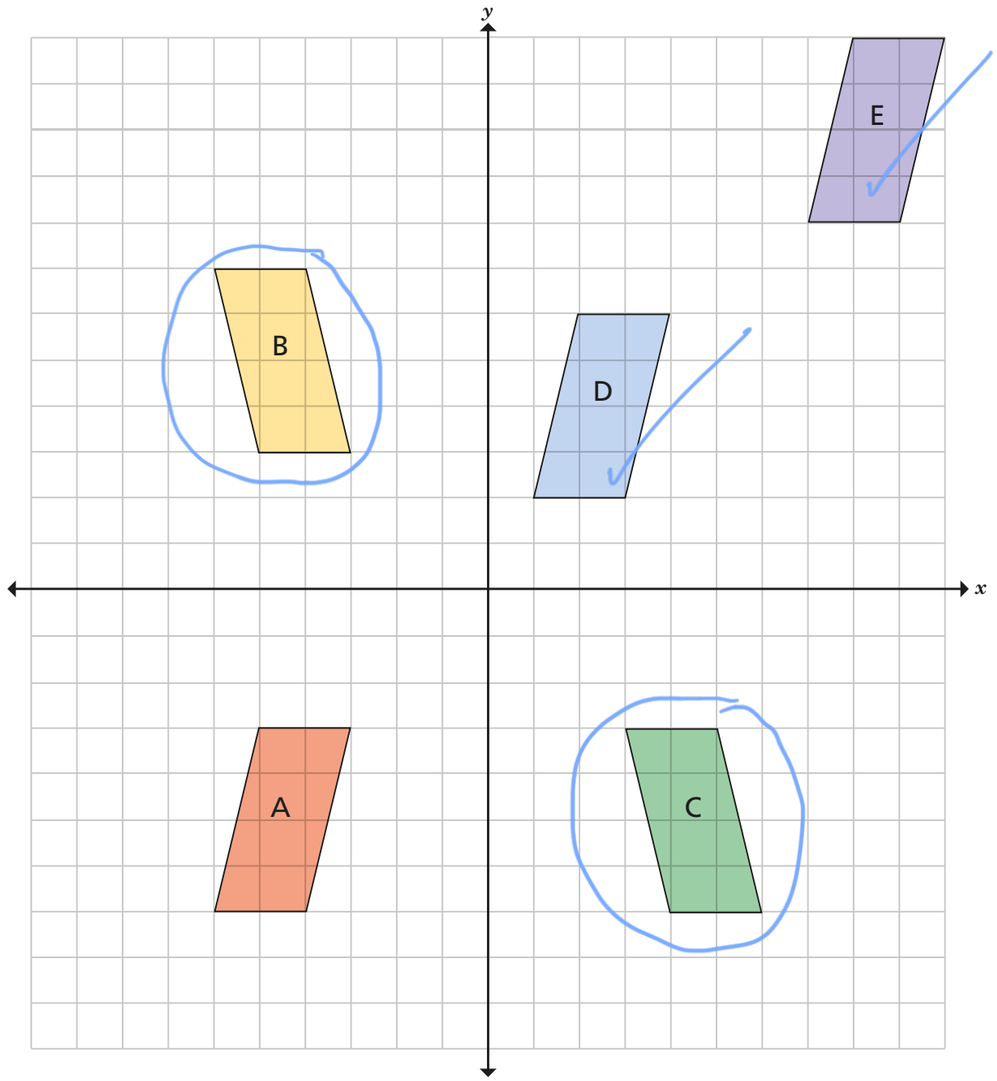
Reflections

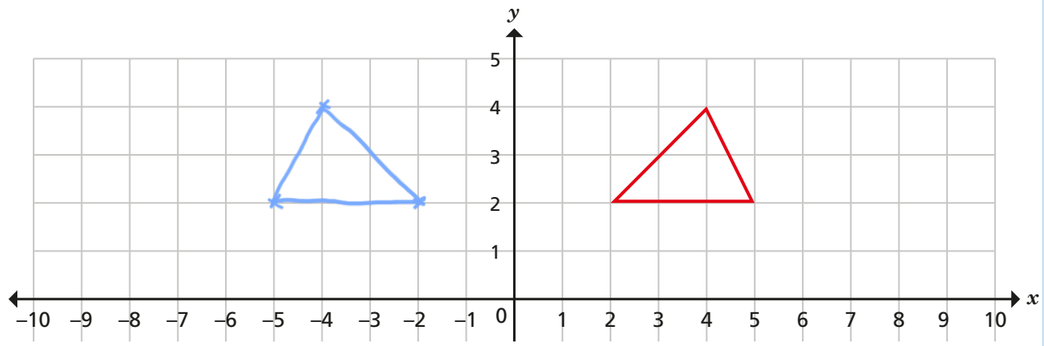
1 Five parallelograms are shown on the coordinate grid.



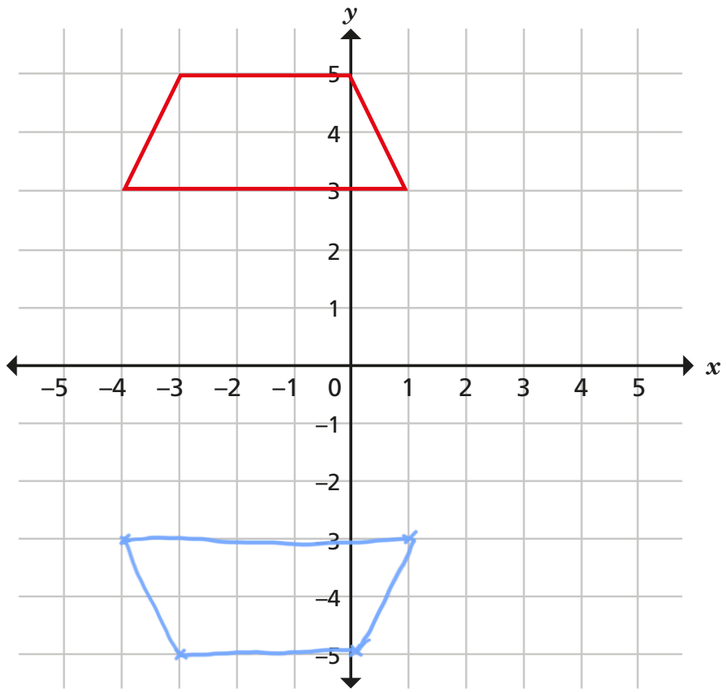
a) Tick the shapes that are translations of shape A.

b) Circle the shapes that are reflections of shape A.

2 Reflect the triangle in the y-axis.



3



a) What is the name of the shape plotted on the grid?

Trapezium

b) Reflect the shape in the x-axis.

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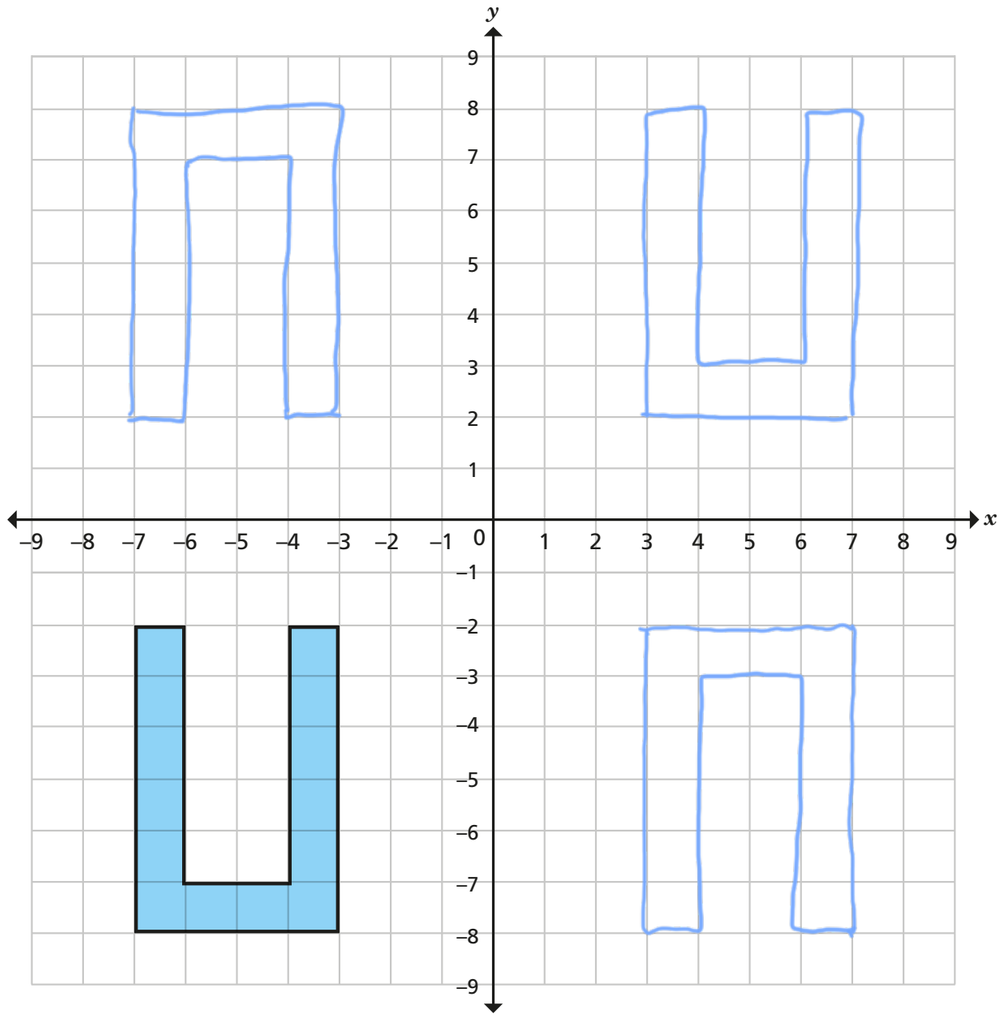
4 An octagon is shown on the coordinate grid.



a) Reflect the shape in the x-axis.

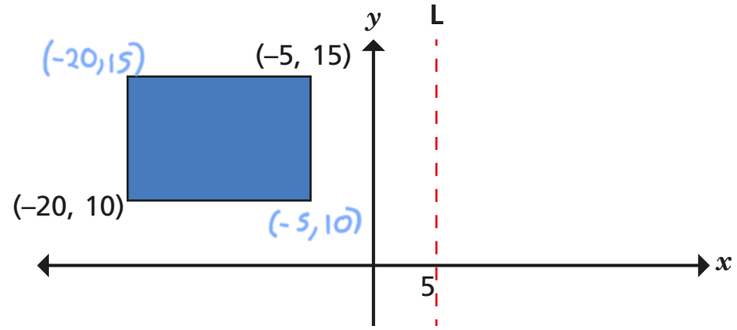
b) Translate the new shape 10 right and 10 down.

c) Reflect the new shape in the x-axis.

d) What do you notice?

e) Create a similar question for your partner to complete.

5 The shape is reflected in the line marked L.



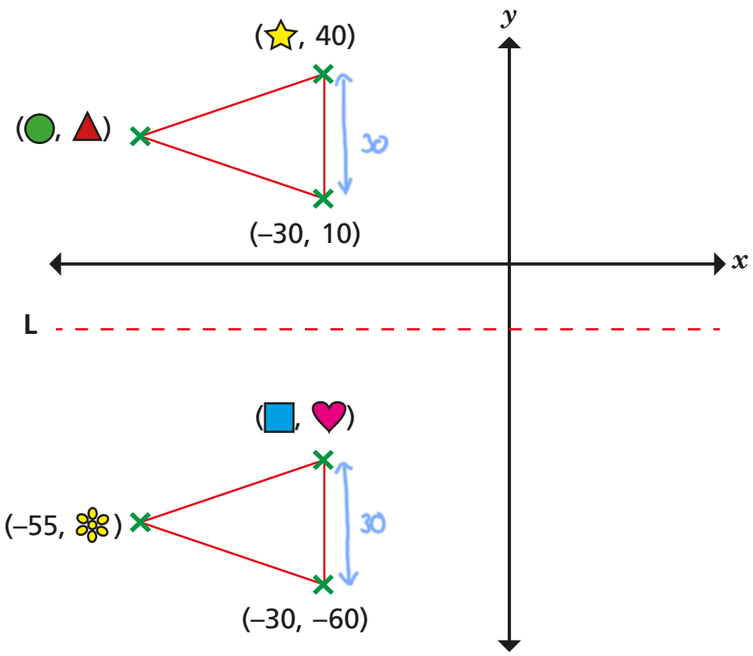
Work out the coordinates of the new vertices.

The new vertices are at

(15 , 10) (15 , 15) (30 , 10) (30 , 15)

6 The isosceles triangle has been reflected in the line marked L.

Work out the missing values.



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Mister Holland

Gregory Porter

Hello, Mister Holland
And Rosie may come out and play
She's a good girl now
Won't be no trouble, no how

By the way, Mister Holland
I like the way you make no trouble of my skin
It's not a problem
Nor has it ever been

You invited me into your home
Treated me like I was grown
I was only 18
And Rosie was a beauty queen

Hello, Mister Holland
And Rosie may come out and play
I'm a good boy now
Won't be no trouble, no how

By the way, Mister Holland
Like the way you treat me like a regular Joe
I wanted a soda
And you said Rosie could go

Anyway, I like your style
Seemed like I'll be around for a while
We can talk about a country mile
And listen to a blues record, check it out, oh

Hello, Mister Holland
And Rosie may come out and play
It's a good world now
Won't be no trouble, no how

And by the way, Mister Holland
I liked the way you treat me like a regular being
My name is not a problem
And oh, it never will

Anyway, I like your way
People ought to be able to play
And keep your soul as black as the night
When you walk in straight into the light
Oh now

Anyhow, I like your way
People ought to be able to play
Keep your soul as black as the night
As you walk into the brighter light

Mama used to fear for me
When you walk out in the world, you see
Some people will fear your face and name
But Mister Holland, don't play that game

Oh, Mister Hollandx3
Oh, always treat me right

Mister Holland
Hey, Mister Holland
Thank you, Mister Holland
You sure 'nuff treat me right…

With race relations tense across the U.S., it seems that now more than ever this country needs some healing. Singer **Gregory Porter** attempts to bridge that gap with his latest single, "Mister Holland," from his upcoming album, *All Rise*.

In the song, Porter lays it all on the line in the name of love as he addresses the white father of a girl he is attracted to. Written from the viewpoint of a teenaged Porter, he thanks the father for not judging him based on his skin colour. The slight ironic undertone of his lyrics suggests that the father was anything but accepting with him, which is exactly what Porter intended. "That suggests that maybe I liked a girl when I was 15 and I came to a door and somebody said, '(Racist term), if you don't get away from this house...,'" Porter explains in a statement. "That type of energy is being resurrected and made to feel okay these days. I think about things like that for my son."

As in previous songs, Porter utilizes his music to shine a light on inequality in a way that is distinctly his own while also displaying influences by legendary artists like **Stevie Wonder** and **Marvin Gaye**. "Ultimately, 'Mister Holland' is a song about equality. It's about the desire for mutual respect and the desire for a young man to be treated like an average teenager," he continues. "A song of thank you for being treated normal. The implied unspoken experience is the subtle protest of this song. Stevie and Marvin taught us how to groove with a social song, so, thank you Mister Holland."

Vital Vocabulary: Mister Holland

1. This song is set in America. Find three clues (in the song!) to support that statement.
2. Look up the word, 'ironic' (irony) in the dictionary and write its definition.
3. Find an example of irony within the song.
4. Which of the following words is closest in meaning to the word, 'resurrected'?
   revive / return / restore / renew
5. What does the phrase 'mutual respect' mean?
6. Find and copy one word from the news article that means the same as, 'difficult to detect or find.'

Retrieval: Mister Holland

1. Summarise what the song is about.
2. What does the singer like about Mister Holland (Find 3 examples).
3. In the 6th verse, what does the singer suggest they do together?
4. What did the singer's mum think about her son's situation?
5. What is the name of the album you can find this song on?
6. Who influenced Porter's music?

Thinking Caps: Mister Holland

1. Is the singer actually trying to say thank-you to Mister Holland? How do you know?
2. How do you think young Gregory Porter was actually treated? (Use the text)
3. What does the line, 'My name is not a problem,' suggest?
4. Why do you think Gregory Porter wrote this song? Use evidence from the text to support your answer.
5. How does this song make you feel? Why?

Spooky Scientist Stories!

Before Christmas, we were looking at some famous stories about spooky scientists – The Phantom Coach, Dr. Jekyll and Mr Hyde and Frankenstein. We wrote some fantastic setting and character descriptions. Now we are going to write our own spooky scientist stories!

Task 1:

What super-powers or incredible inventions can you think of?

Invisibility? Time travel machine? Freeze-ray?

Write down all your ideas. Then pick the one idea you think is really great to base your story around.

Task 2:

Reminder: we came up with a plot structure for our mad scientist stories:

Generic 'mad inventor' story plot line
Main character (MC) is very clever and becomes obsessed with their work.
MC is motivated to complete their work. (Has a strong purpose)
The MC makes their invention
The MC is successful
The MC realises they have created something terrible.
The story ends tragically.

Think about your story and ask yourself these questions:

- Why would your inventor/scientist want to create their invention? (e.g. Frankenstein wanted to bring back his loved ones; Jekyll wants to get rid of his bad qualities).
- What form will your invention take? (An elixir, machine, chemical…)

- How will your scientist make their invention?
- How are they successful?
- What is the result / disaster (e.g. The invisible man can't turn back; Frankenstein is horrified; Mr Hyde is a killer…)

Fill out your ideas on the planning sheet on the next page:

L.O. To plan my story's plotline

Who is your main character?

What do they invent?

When/where will the story take place?

Why would they want to make that invention? (What's their motivation?)	
How is your MC going to make their invention? What form will it take?	
How are they successful?	
What was the result / disaster?	

Task 3:

Read the following Spooky scientist story.

- Can you spot all the main plot points?
- What do you like about the story?
- What do you dislike?
- Highlight or note any words, phrases or ideas you would like to magpie for your own story.

The Mysterious Squeak

What a ghastly noise it was, high-pitched and shrilling, piercing the air like a fork scraping along a porcelain plate. It had always been there, ever since the family moved into the abandoned townhouse, once owned by a somewhat mysterious and eccentric scientist, Dr. Gertrude Haylock. Despite searching high and low for the source of this constant interruption, no member of the family was any wiser of where or what this noise was coming from. Had they known the origin of this irritation, they may have shown more tolerance, more sympathy. But alas, like some of the best stories, this one went untold. Until now.

Five years ago, there had been no squeak. So what had caused it?

Well to answer that question, I will need to tell the story of Gertrude and her incredible discovery.

Dr. Gertrude Haylock was a formidable woman. A brilliant, shrewd, quick-witted, astute, creative genius. If she had been born a hundred years later, she would have been celebrated as one of the greatest minds of the century. Unfortunately, the great doctor was born in a time when women were supposed to be ladylike - quiet, un-opinionated, meek, mild and without great ideas of their own. Gertrude had anything but these qualities. As such, she was avoided by others, left alone to her thoughts, a solitary, female figure at scientific demonstrations and lectures. But what did she care? No-one would stop her, nothing would get in her way.

It was after a particularly inspirational lecture on the composition of molecules in the human body one day that Gertrude had her apple-on-the-head moment. Anyone witnessing her strange gesticulations as she walked home that afternoon would have thought she was stark-raving mad, muttering to herself phrases like:

“What if I…”

“But would that lead to…”

“No that wouldn’t work. Would it? Could I?”

“Where would I even get a crystal that large?”

Over the next few days, nay, weeks, Gertrude put her plan into action. She toiled day and night in her little, unkempt laboratory in the cellar of the house, often forgetting to wash, brush her teeth, eat or even go to bed! She squealed when successful and screeched when she failed. She worked herself to the bone, obsessed. Nothing could distract her. Finally, her work reached its conclusion.

Gertrude was ecstatic! She had accomplished something those stuffy, misogynistic male academics never had: a real-life, working, shrinking machine! There was only one thing left to do: test it.

She didn’t hesitate for a second, standing in position, putting on her goggles and attaching the extension wire. She pulled it once, hard, loudly exclaiming,

“One giant step for man, one teeny-tiny step for womankind!”

A laser-beam shot out of the invention, hitting her squarely in the chest but she didn’t falter as the world around her seemed to get larger and larger rather than her becoming smaller and smaller. When it eventually stopped, she squealed in delight, “I’ve done it, I’ve done it!” dancing around the laboratory, being careful not to fall in between the cracks of the floorboards.

It was shortly after this moment of achievement that Gertrude had her moment of realisation: “How am I going to enlarge myself?” This thought was followed by a flurry of other concerns - “How can I show my invention to the professors at the university? No-one knows where I am or what I was doing! How can I make a growth-ray if I’m too small to pick up any equipment?” and so on. Of course, if you or I were in the room at that exact moment, all we would have heard would be little, annoying, high-pitched squeaks.

In fact, that was all anyone heard from Gertrude again. Maybe, if the family had listened carefully, they would have noticed the squeaks were words. Maybe, if one of them had ventured into the cellar, they would have noticed a strange-looking contraption. Maybe, if someone had looked through the eye-piece of the microscope, they would have seen a message for help. Maybe, well, you get the idea...

Task 4:

Plan your story in more detail:

L.O. To plan a science-fiction story

Generic 'mad inventor' story plot line	My story	Details
Main character (MC) is very clever and becomes obsessed with their work.		
MC is motivated to complete their work. (Has a strong purpose)		
The MC makes their invention		
The MC is successful		
The MC realises they have created something terrible.		
The story ends tragically.		

Task 5:

Now it's time for writing! You roughly want one paragraph for each plot point. I will be looking for:

- A clear plot structure.
- A variety of punctuation and sentence types.

- Detailed descriptions.
- Speech, correctly punctuated, that tells me about the character or moves the action along.
- An engaging opening and ending.

Remember, you can use the model story to help you with your own stories and USE YOUR PLAN!

Task 6:

Editing and improving.

Read through your completed story. Check and correct:

- Spellings
- Punctuation
- Grammar – are there any parts which don't make sense?
- Add / Take away – are there any parts that need more detail? Is there anything you don't need?
- Flow and cohesion – is your story in a sensible order. Does each paragraph flow well into the next one? Does your opening link to your ending?

Task 7:

Write-up.

Once you have edited and improved your story, you can then write it up in best.

You can choose how you do this. It could be written normally, illustrated with pictures, written up as a little book or typed up. I leave that up to you!

Please send your final draft to your class teacher on ClassDojo.