

Name _____

Date _____

Maths vocabulary — answers

49 tasks in five styles, covering every key word in Unit 1.

A · Unscramble the term — Rearrange the letters to make the term that matches the definition.

1 socroidanet

A pair of numbers (x, y) fixing a position.

Example: (3, -2).

Answer: coordinates

The word is **coordinates** — A pair of numbers (x, y) fixing a position.

2 irogin

The point (0, 0), where the axes cross.

Example: The centre of the grid.

Answer: origin

The word is **origin** — The point (0, 0), where the axes cross.

3 nuqdaart

One of the four regions the axes divide the plane into.

Example: (-2, 5) is in quadrant 2.

Answer: quadrant

The word is **quadrant** — One of the four regions the axes divide the plane into.

4 nrtnalstaoi

A slide: every point moves the same way.

Example: By (4, -1).

Answer: translation

The word is **translation** — A slide: every point moves the same way.

5 oevtcr

The pair (across, up) describing a translation.

Example: (-3, 5).

Answer: vector

The word is **vector** — The pair (across, up) describing a translation.

6 oerlfceitn

A flip in a mirror line.

Example: In the y-axis.

Answer: reflection

The word is **reflection** — A flip in a mirror line.

7 ooratitn

A turn about a fixed point.

Example: 90° anticlockwise about (1, 1).

Answer: rotation

The word is **rotation** — A turn about a fixed point.

8 tocgurne

Same shape and same size.

Example: After any slide, flip or turn.

Answer: congruent

The word is **congruent** — Same shape and same size.

9 risimal

Same shape, possibly different size.

Example: After an enlargement.

Answer: similar

The word is **similar** — Same shape, possibly different size.

10 tnealgrmene

A change of size by a scale factor.

Example: Scale factor 3.

Answer: enlargement

The word is **enlargement** — A change of size by a scale factor.

B · Fill in the gaps — Use a word from the box to complete each sentence.

- 11** A slide in which every point moves the same distance in the same direction is a ____.

Word box: □

Answer: translation

Described by a vector.

- 12** A flip in a mirror line is a ____.

Word box: □

Answer: reflection

The image is the same distance from the mirror, on the other side.

- 13** A turn about a fixed point is a ____.

Word box: □

Answer: rotation

It needs an angle, a direction and a centre.

- 14** A change of size by a scale factor is an ____.

Word box: □

Answer: enlargement

Angles stay the same; lengths do not.

- 15** Two shapes that are the same shape and the same size are ____.

Word box: □

Answer: congruent

Translation, reflection and rotation all give this.

- 16 Two shapes that are the same shape but a different size are _____.

Word box: □

Answer: similar

Enlargement gives this.

- 17 A translation is described by a _____.

Word box: □

Answer: vector

(across, up), for example $(-3, 5)$.

- 18 The number every length is multiplied by in an enlargement is the _____.

Word box: □

Answer: scale factor

Lengths $\times k$, areas $\times k^2$.

- 19 The point $(0, 0)$ is called the _____.

Word box: □

Answer: origin

Where the two axes cross.

- 20 A point that does not move during a transformation is an _____.

Word box: □

Answer: invariant point

A point on the mirror line, or the centre of a rotation.

C · Choose the correct ending — Pick the reason that correctly finishes each sentence.

- 21 A translation leaves a shape congruent because ...

- ☐ it is a small movement
- ☐ nothing is stretched, turned over or resized
- ☐ the vector is short

Answer: nothing is stretched, turned over or resized

Only the position changes.

- 22 An enlargement gives a similar, not a congruent, image because ...

- ☐ the angles change
- ☐ the lengths change but the angles do not
- ☐ the shape is turned over

Answer: the lengths change but the angles do not

Same shape, different size — that is what similar means.

- 23 A rotation must state its centre because ...

- ☐ it looks complete
- ☐ the same angle about a different centre lands the shape somewhere else
- ☐ the centre is always the origin

Answer: the same angle about a different centre lands the shape somewhere else

Angle and direction alone do not fix the image.

24 Areas are multiplied by k^2 in an enlargement because ...

- ☐ areas are large
- ☐ an area is a length multiplied by a length
- ☐ it is a rule to memorise

Answer: an area is a length multiplied by a length

Each of the two lengths is multiplied by k , so the product is multiplied by $k \times k$.

25 A point on the mirror line does not move because ...

- ☐ it is special
- ☐ its distance from the mirror is zero
- ☐ the mirror is invisible

Answer: its distance from the mirror is zero

The image is the same distance on the other side, and that distance is 0.

26 You can find the distance between (2, 5) and (9, 5) without a grid because ...

- ☐ the numbers are small
- ☐ they share a y-coordinate, so only the x changes
- ☐ 5 is a nice number

Answer: they share a y-coordinate, so only the x changes

Subtract the x-coordinates and take the size.

27 A map scale of 1 : 50 000 needs no units because ...

- ☐ units are optional
- ☐ both sides are measured in the same units
- ☐ maps are always in centimetres

Answer: both sides are measured in the same units

1 cm to 50 000 cm, or 1 inch to 50 000 inches — the ratio is the same.

D · Match the definition — Type the term that matches each definition.

28 Which term means: *A pair of numbers (x, y) fixing a position.*

Answer: coordinates

coordinates — (3, -2).

29 Which term means: *The point (0, 0), where the axes cross.*

Answer: origin

origin — The centre of the grid.

30 Which term means: *One of the four regions the axes divide the plane into.*

Answer: quadrant

quadrant — (-2, 5) is in quadrant 2.

31 Which term means: *The shape you start with.*

Answer: object

object — Triangle A.

32 Which term means: *The shape after the transformation.*

Answer: image

image — Triangle A'.

- 33** Which term means: *A slide: every point moves the same way.*
Answer: translation
translation — By $(4, -1)$.
- 34** Which term means: *The pair (across, up) describing a translation.*
Answer: vector
vector — $(-3, 5)$.
- 35** Which term means: *A flip in a mirror line.*
Answer: reflection
reflection — In the y-axis.
- 36** Which term means: *The line a shape is reflected in.*
Answer: mirror line
mirror line — $x = 2$.
- 37** Which term means: *A turn about a fixed point.*
Answer: rotation
rotation — 90° anticlockwise about $(1, 1)$.
- 38** Which term means: *The point everything turns around.*
Answer: centre of rotation
centre of rotation — The one point that does not move.
- 39** Which term means: *Same shape and same size.*
Answer: congruent
congruent — After any slide, flip or turn.
- 40** Which term means: *Same shape, possibly different size.*
Answer: similar
similar — After an enlargement.
- 41** Which term means: *A change of size by a scale factor.*
Answer: enlargement
enlargement — Scale factor 3.
- 42** Which term means: *The number every length is multiplied by.*
Answer: scale factor
scale factor — $k = 2$ doubles every length.
- 43** Which term means: *A point that does not move.*
Answer: invariant point
invariant point — A point on the mirror line.

E · Reading transformation questions — What the instruction words are asking for.

- 44** A question says “describe fully the single transformation”. What must your answer contain?
- ☐ The name only
 - ☐ The name and every detail it needs — vector, mirror line, or angle, direction and centre
 - ☐ A drawing
 - ☐ The coordinates

Answer: The name and every detail it needs — vector, mirror line, or angle, direction and centre

“A rotation” alone scores nothing. “A rotation of 90° anticlockwise about (1, 1)” scores the marks.

- 45** A question says “map ABC onto A'B'C'”. What does *map* mean here?
- ☐ Draw a map
 - ☐ Transform one shape onto the other
 - ☐ Measure it
 - ☐ Label it

Answer: Transform one shape onto the other

It is the examination word for “apply a transformation that turns this into that”.

- 46** A question uses the notation A'. What does the dash mean?
- ☐ A different letter
 - ☐ The image of A after the transformation
 - ☐ A mistake
 - ☐ A measurement

Answer: The image of A after the transformation

It is read “A dash” or “A prime”.

- 47** A question says “state the scale factor”. What kind of answer is wanted?
- ☐ A pair of coordinates
 - ☐ A single number
 - ☐ A vector
 - ☐ An angle

Answer: A single number

The number every length is multiplied by.

- 48** A question says “without the aid of a grid”. What is it testing?
- ☐ Your drawing
 - ☐ That you can work from the coordinates alone
 - ☐ Your memory
 - ☐ Nothing

Answer: That you can work from the coordinates alone

Objectives 7Gp.02 and 7Gp.03 both say this explicitly.

- 49** A question says “1 cm represents 5 m”. Which way do you multiply?
- ☐ Always multiply
 - ☐ Drawing to real life: multiply. Real life to drawing: divide.
 - ☐ Always divide
 - ☐ It does not matter

Answer: Drawing to real life: multiply. Real life to drawing: divide.

Check the size of your answer — real life is the bigger of the two.