Reasoning and Problem Solving
Step 4: Describe Movement

National Curriculum Objectives:

Mathematics Year 4: (4P2) Describe movements between positions as translations of a given unit to the left/right and up/down
Mathematics Year 4: (4P3a) Describe positions on a 2-D grid as coordinates in the first quadrant

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Explain if the statement describing the one-step translation of a point on a 5x5 grid (with 1:1 scale) is correct.
Expected Explain if the statement describing the two-step translation of a point on a 10x10 grid (with 1:1 scale) is correct.
Greater Depth Explain if the statement describing the two-step translation of two shapes is correct on a 10x10 grid (using varying scales with some points plotted between increments).

Questions 2, 5 and 8 (Problem Solving)
Developing Identify a one-step translation and the corresponding coordinates on a 5x5 grid (with 1:1 scale).
Expected Identify the points with the same translation on a 10x10 grid (with 1:1 scale). Write the coordinates and the translations made.
Greater Depth Identify the points with the same translations on a 10x10 grid (using varying scales with some points plotted between increments). Write the coordinates and the translations made.

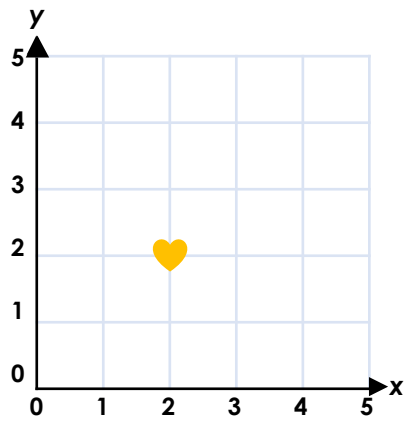
Questions 3, 6 and 9 (Problem Solving)
Developing Match the two translated shapes on a 5x5 grid (with 1:1 scale) to two statements. One-step translations only.
Expected Match the three translated shapes on a 10x10 grid (with 1:1 scale) to three statements. Two-step translations.
Greater Depth Match the three translated shapes on a 10x10 grid (using varying scales with some points plotted between increments) to four statements. Two-step translations.

More Year 4 Position and Direction resources.

Did you like this resource? Don't forget to review it on our website.

Describe Movement

1a. The heart has been translated. Its starting coordinates were (2, 0).
Lee says it has moved 2 up.
Is he correct? Explain.

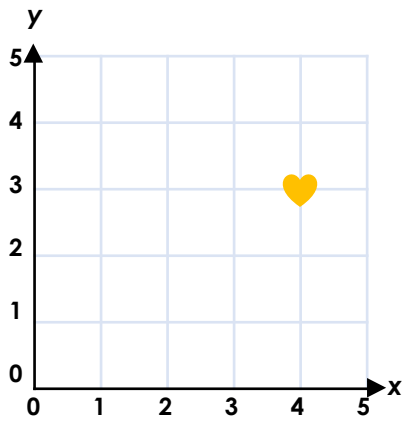


D

R

Describe Movement

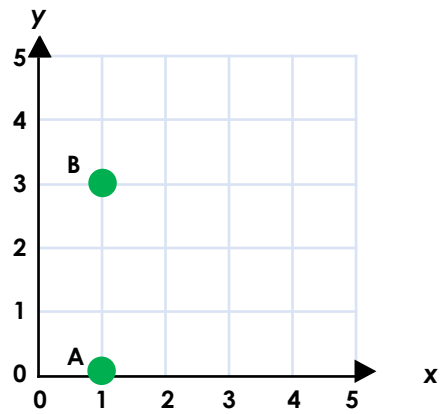
1b. The heart has been translated. Its starting coordinates were (1, 3).
Kayleigh says it has moved 4 right.
Is she correct? Explain.



D

R

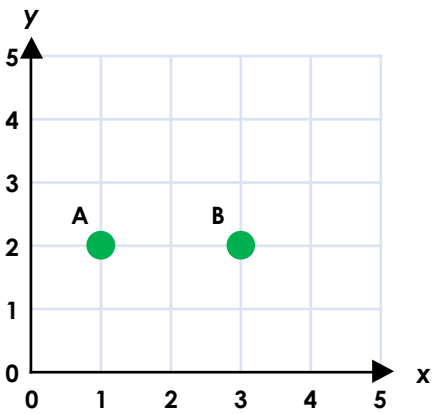
2a. Point A has been translated. Write the translation made and the coordinates of the start and finish positions of the point.



D

PS

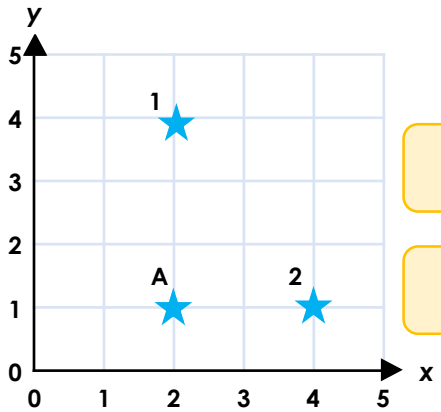
2b. Point A has been translated. Write the translation made and the coordinates of the start and finish positions of the point.



D

PS

3a. Star A has been translated. Match the point to the correct translation statement.



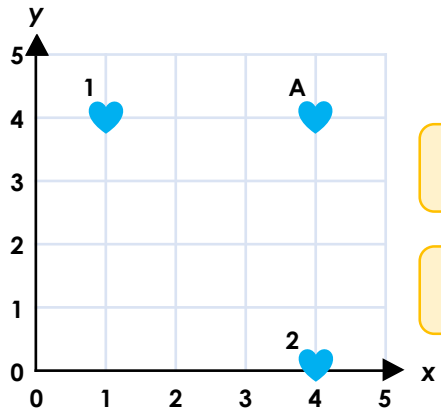
A. 2 right

B. 3 up

D

PS

3b. Heart A has been translated two times. Match the shape to the correct translation statement.



A. 3 left

B. 4 down

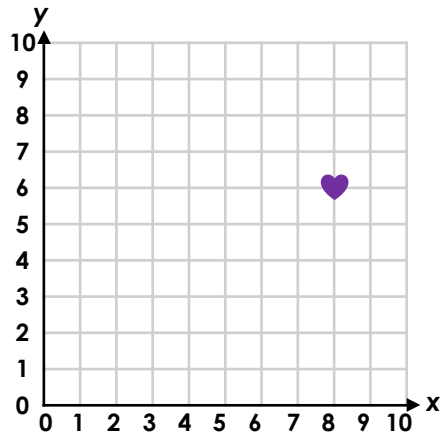
D

PS

Describe Movement

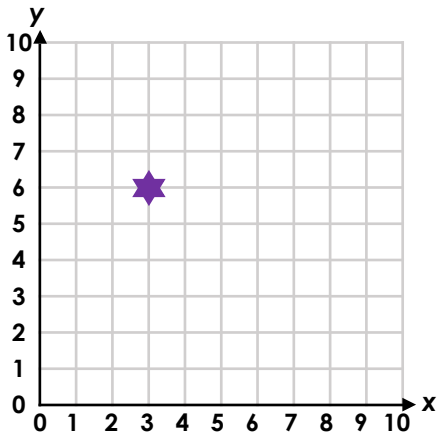
Describe Movement

4a. The heart has been translated. Its starting coordinates were (4, 5).
Ruby says it has moved 1 right and 4 up.
Is she correct? Explain.



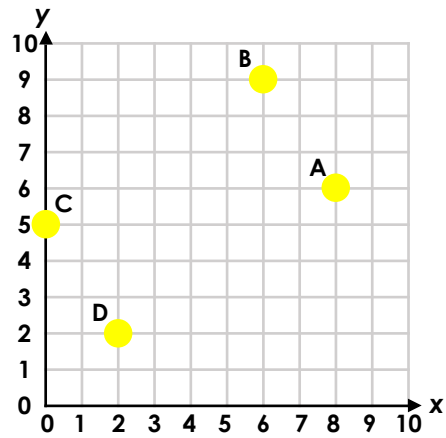
E R

4b. The star has been translated. Its starting coordinates were (5, 8).
Ali says it has moved 2 left and 2 down.
Is he correct? Explain.



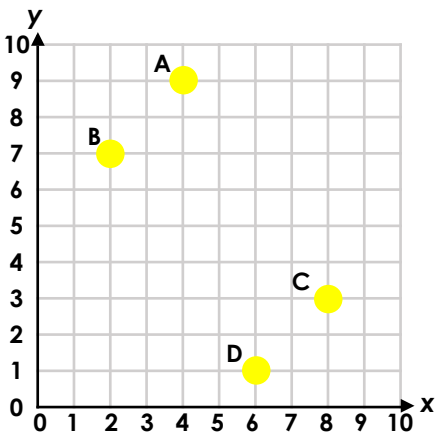
E R

5a. Points A and B have made exactly the same translations. Write the translations made and the coordinates of the start and finish positions of each point.



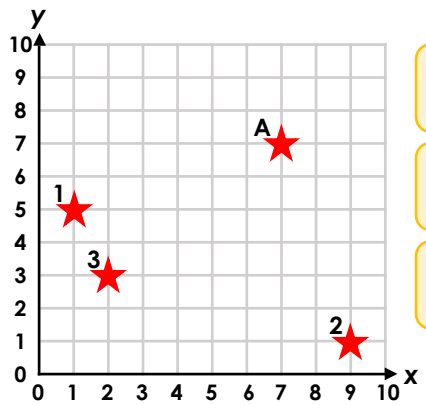
E PS

5b. Points A and B have made exactly the same translations. Write the translations made and the coordinates of the start and finish positions of each point.



E PS

6a. Star A has been translated three times. Match each numbered point to the correct translation statement.



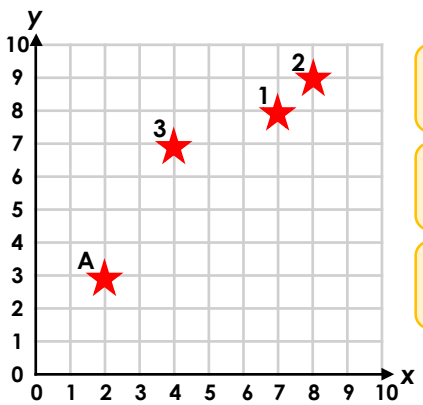
A. 2 right and 6 down

B. 5 left and 4 down

C. 6 left and 2 down

E PS

6b. Star A has been translated three times. Match each numbered point to the correct translation statement.



A. 5 right and 5 up

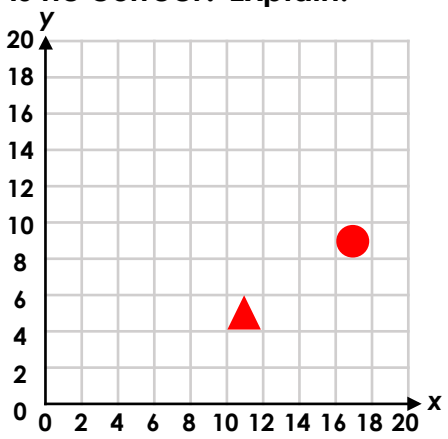
B. 2 right and 4 up

C. 6 right and 6 up

E PS

Describe Movement

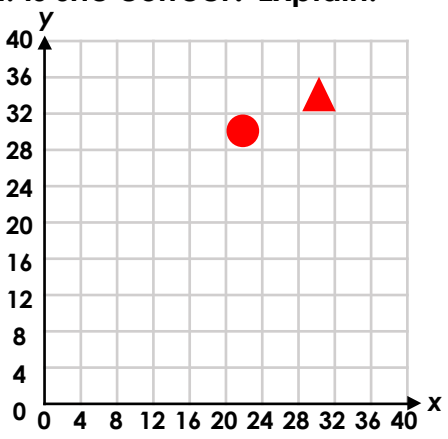
7a. The triangle and circle been translated from (3, 15) and (9, 19). Jim says they have both moved 8 right and 10 down. Is he correct? Explain.



GD

R

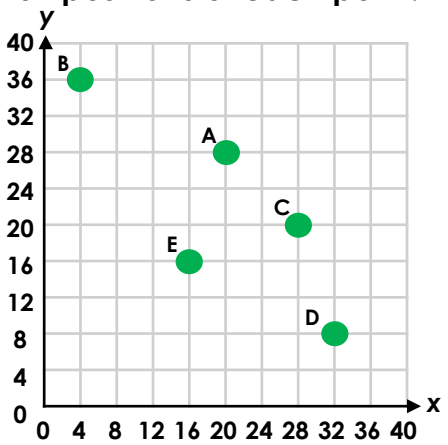
7b. The triangle and circle have been translated from (18, 18) and (10, 14). Tiana says they have both moved 16 right and 16 down. Is she correct? Explain.



GD

R

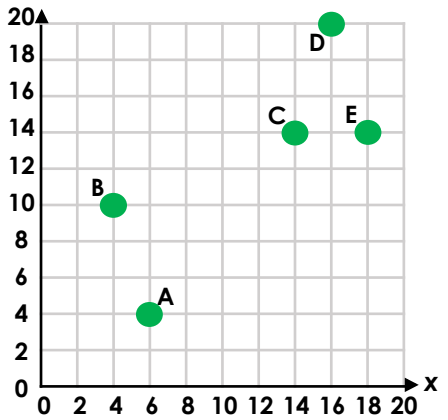
8a. Points A and B have made exactly the same translations. Write the translations made and the coordinates of the start and finish positions of each point.



GD

PS

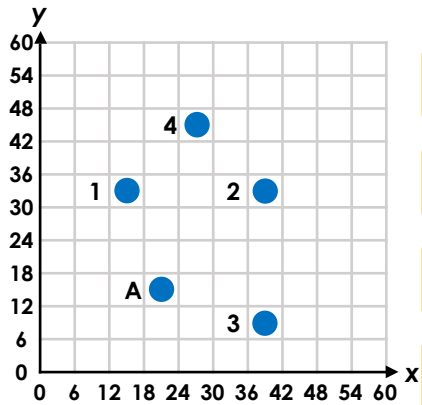
8b. Points A and B have made exactly the same translations. Write the translations made and the coordinates of the start and finish positions of each point.



GD

PS

9a. Point A has been translated four times. Match each numbered point to the correct translation statement.



A. 18 right and 18 up

B. 18 right and 6 down

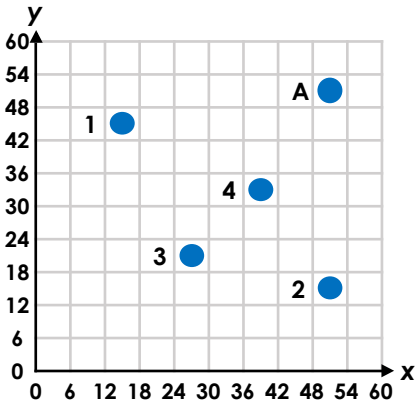
C. 6 left and 18 up

D. 6 right and 30 up

GD

PS

9b. Point A has been translated four times. Match each numbered point to the correct translation statement.



A. 12 left and 18 down

B. 36 left and 6 down

C. 36 down

D. 24 left and 30 down

GD

PS

Reasoning and Problem Solving
Describe Movement

Developing

1a. Yes, Lee is correct because the new coordinates are (2, 2).

2a. It has moved 3 squares up. A (1, 0) has moved to B (1, 3).

3a. 1B; 2A

Expected

4a. No, Ruby is incorrect because it has moved 4 squares right and 1 square up.

5a. They have both moved 6 squares left and 4 squares down. A (8, 6) has moved to D (2, 2); B (6, 9) has moved to D (0, 5).

6a. 1C; 2A; 3B

Greater Depth

7a. Yes, Jim is correct because the new coordinates are (11, 5) and (17, 9).

8a. They have both moved 12 right and 20 down. A (20, 28) has moved to D (32, 8); B (4, 36) has moved to E (16, 16).

9a. 1C; 2A; 3B; 4D

Reasoning and Problem Solving
Describe Movement

Developing

1b. No because the heart has moved 3 squares right.

2b. It has moved 2 squares right. A (1, 2) has moved to B (3, 2).

3b. 1A; 2B

Expected

4b. Yes, Ali is right because the new coordinates are (3, 6).

5b. They have both moved 4 squares right and 6 squares down. A (4, 9) has moved to C (8, 3); B (2,7) has moved to D (6, 1).

6b. 1A; 2C; 3B

Greater Depth

7b. No, she is incorrect because they both move 12 right and 16 up.

8b. They have both moved 12 right and 20 down. A (6, 4) has moved to E (18, 14); B (4, 10) has moved to D (16, 20).

9b. 1B; 2C; 3D; 4A