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Stage 01: Recognise coordinates and vectors

Recognise

Show your working or construction on paper. State units where asked. For questions 7 and 8, explain your method. Numerical entries may be rounded to 2 decimal places.

Work on separate paper. Plot and label figures; retain compass arcs. Give a reason for items 7 and 8.

1. In point (-2, 3), which coordinate is horizontal?

2. In point (-1, 4), which coordinate is horizontal?

3. In point (0, 2), which coordinate is horizontal?

4. In point (1, 3), which coordinate is horizontal?

5. In point (2, 4), which coordinate is horizontal?

6. In point (-3, 2), which coordinate is horizontal?

7. Diagnose an error. In point (-2, 3), which coordinate is horizontal? A learner answers “-1”. Give the correct answer and identify why the proposed answer fails.

8. Explain your choice. In point (-1, 4), which coordinate is horizontal?

Self-check after attempting: use the separate answer key on the skill page. Correct reasoning and a valid drawing matter as well as the final answer.

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Stage 02: Interpret signed movement

Interpret

Show your working or construction on paper. State units where asked. For questions 7 and 8, explain your method. Numerical entries may be rounded to 2 decimal places.

Work on separate paper. Plot and label figures; retain compass arcs. Give a reason for items 7 and 8.

1. A move has vector (2, 1). What is its horizontal displacement?

2. A move has vector (-3, -1). What is its horizontal displacement?

3. A move has vector (2, 0). What is its horizontal displacement?

4. A move has vector (-3, 1). What is its horizontal displacement?

5. In point (-3, 2), which coordinate is horizontal?

6. In point (-2, 3), which coordinate is horizontal?

7. Diagnose an error. A move has vector (2, 1). What is its horizontal displacement? A learner answers “3”. Give the correct answer and identify why the proposed answer fails.

8. Explain your choice. A move has vector (-3, -1). What is its horizontal displacement?

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Stage 03: Translate a vertex

Perform

Show your working or construction on paper. State units where asked. For questions 7 and 8, explain your method. Numerical entries may be rounded to 2 decimal places.

Work on separate paper. Plot and label figures; retain compass arcs. Give a reason for items 7 and 8.

1. Translate P(0, 2) by vector (-3, -1). State P' as (x, y).

2. Translate P(1, 3) by vector (2, 0). State P' as (x, y).

3. Translate P(2, 4) by vector (-3, 1). State P' as (x, y).

4. Translate P(-3, 2) by vector (2, -1). State P' as (x, y).

5. A move has vector (-3, 0). What is its horizontal displacement?

6. A move has vector (2, 1). What is its horizontal displacement?

7. Diagnose an error. Translate P(0, 2) by vector (-3, -1). State P' as (x, y). A learner answers “(1, -3)”. Give the correct answer and identify why the proposed answer fails.

8. Explain your choice. Translate P(1, 3) by vector (2, 0). State P' as (x, y).

Self-check after attempting: use the separate answer key on the skill page. Correct reasoning and a valid drawing matter as well as the final answer.

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Stage 04: Translate a whole figure

Select & Adapt

Show your working or construction on paper. State units where asked. For questions 7 and 8, explain your method. Numerical entries may be rounded to 2 decimal places.

Work on separate paper. Plot and label figures; retain compass arcs. Give a reason for items 7 and 8.

1. Triangle A(1, 3), B(3, 3), C(1, 4) moves by (2, 0). State C'; draw all three images on paper.

2. Triangle A(2, 4), B(4, 4), C(2, 5) moves by (-3, 1). State C'; draw all three images on paper.

3. Triangle A(-3, 2), B(-1, 2), C(-3, 3) moves by (2, -1). State C'; draw all three images on paper.

4. Triangle A(-2, 3), B(0, 3), C(-2, 4) moves by (-3, 0). State C'; draw all three images on paper.

5. Translate P(-1, 4) by vector (2, 1). State P' as (x, y).

6. Translate P(0, 2) by vector (-3, -1). State P' as (x, y).

7. Diagnose an error. Triangle A(1, 3), B(3, 3), C(1, 4) moves by (2, 0). State C'; draw all three images on paper. A learner answers “(4, 3)”. Give the correct answer and identify why the proposed answer fails.

8. Explain your choice. Triangle A(2, 4), B(4, 4), C(2, 5) moves by (-3, 1). State C'; draw all three images on paper.

Self-check after attempting: use the separate answer key on the skill page. Correct reasoning and a valid drawing matter as well as the final answer.

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Stage 05: Recover the translation vector

Connect & Justify

Show your working or construction on paper. State units where asked. For questions 7 and 8, explain your method. Numerical entries may be rounded to 2 decimal places.

Work on separate paper. Plot and label figures; retain compass arcs. Give a reason for items 7 and 8.

1. P(2, 4) maps to P'(-1, 5). State the translation vector.

2. P(-3, 2) maps to P'(-1, 1). State the translation vector.

3. P(-2, 3) maps to P'(-5, 3). State the translation vector.

4. P(-1, 4) maps to P'(1, 5). State the translation vector.

5. Triangle A(0, 2), B(2, 2), C(0, 3) moves by (-3, -1). State C'; draw all three images on paper.

6. Triangle A(1, 3), B(3, 3), C(1, 4) moves by (2, 0). State C'; draw all three images on paper.

7. Diagnose an error. P(2, 4) maps to P'(-1, 5). State the translation vector. A learner answers “(1, -3)”. Give the correct answer and identify why the proposed answer fails.

8. Explain your choice. P(-3, 2) maps to P'(-1, 1). State the translation vector.

Self-check after attempting: use the separate answer key on the skill page. Correct reasoning and a valid drawing matter as well as the final answer.

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Stage 06: Connect to a graph shift

Transfer & Solve

Show your working or construction on paper. State units where asked. For questions 7 and 8, explain your method. Numerical entries may be rounded to 2 decimal places.

Work on separate paper. Plot and label figures; retain compass arcs. Give a reason for items 7 and 8.

1. A graph point P(-3, 2) moves 2 units horizontally and -1 vertically. State the original point if its shifted image is (-1, 1).

2. A graph point P(-2, 3) moves -3 units horizontally and 0 vertically. State the original point if its shifted image is (-5, 3).

3. A graph point P(-1, 4) moves 2 units horizontally and 1 vertically. State the original point if its shifted image is (1, 5).

4. A graph point P(0, 2) moves -3 units horizontally and -1 vertically. State the original point if its shifted image is (-3, 1).

5. P(1, 3) maps to P'(3, 3). State the translation vector.

6. P(2, 4) maps to P'(-1, 5). State the translation vector.

7. Diagnose an error. A graph point P(-3, 2) moves 2 units horizontally and -1 vertically. State the original point if its shifted image is (-1, 1). A learner answers “(2, -3)”. Give the correct answer and identify why the proposed answer fails.

8. Explain your choice. A graph point P(-2, 3) moves -3 units horizontally and 0 vertically. State the original point if its shifted image is (-5, 3).

Self-check after attempting: use the separate answer key on the skill page. Correct reasoning and a valid drawing matter as well as the final answer.

Mr. Devonish