MATH 122
(Day 6)

Symmetry in Tessellations

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www.people.vcu.edu/~rhammad/Math122/
Example 1

Translation symmetry only
No reflections
No glide reflections
No rotations
Example 1

Translation symmetry only
No reflections
No glide reflections
No rotations
Example 2

Axis of reflection
No glide reflections
No rotations
Example 2

= Axis of reflection
Example 2

= Axis of reflection
No glide reflections
No rotations
Example 3

Axis of reflection
No glide reflections
No rotations
Example 3

No glide reflections
No rotations

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 Axis of reflection
Example 3

- Axis of reflection
- No glide reflections
- No rotations
Patterns with the same symmetry type
Example 4
Example 4

= Axis of glide reflection
Example 4

= Axis of glide reflection
No reflections
No rotations
Example 5
Example 5

= Axis of reflection
Example 5

- Axis of reflection
- = Axis of glide reflection
Example 5

- Axis of reflection
- Axis of glide reflection
  • Center of 180° rotation
Patterns with the same symmetry type
Patterns with the same symmetry type
Patterns with the same symmetry type
Patterns with the same symmetry type
Example 6
Example 6

\[ \bullet = \text{Center of } 90^\circ \text{ rotation} \]
Example 6

- Red dot = Center of $90^\circ$ rotation
- Green dot = Center of $180^\circ$ rotation
Example 6

- Center of $90^\circ$ rotation
- Center of $180^\circ$ rotation

No reflections
No glide reflections
Example 7

Center of $180^\circ$ rotation
No reflections
No glide reflections
Example 7

- Center of $180^\circ$ rotation
Example 7

- = Center of 180° rotation
  No reflections
  No glide reflections
Question:
How many different kinds of symmetry types are there?
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Answer:
17
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How many different kinds of symmetry types are there?

Answer:
17

Details next time...
Question:
How many different kinds of symmetry types are there?

Answer:
17

Details next time...
...but first, Assignment #5.
Question:
How many different kinds of symmetry types are there?

Answer:
17

Details next time...
...but first, Assignment #5.

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