Geometry

9.1 Translate Figures and Use Vectors

# Transformation

changes

Moves

\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ a figure

preimage

Original called \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (i.e. )

image

New called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (i.e. )

## Translation

direction

distance

Moves

\_\_\_\_\_\_\_\_\_\_ every point the same \_\_\_\_\_\_\_\_\_\_\_\_\_ in the same \_\_\_\_\_\_\_\_\_\_\_\_

Draw ΔRST with vertices R(2, 2), S(5, 2), and T(3, -2). Find the image of each vertex after the translation (x, y) 🡪 (x + 1, y + 2). Graph the image using prime notation.



R’(3, 4), S’(6, 4), T’(4, 0)

The image of (x, y) 🡪 (x + 4, y – 7) is with endpoints P’(-3, 4) and Q’(2, 1). Find the coordinates of the endpoints of the preimage.

P: x + 4 = -3 🡪 x = -7

y – 7 = 4 🡪 y = 11 P(-7, 11)

Q: x + 4 = 2 🡪 x = -2

y – 7 = 1 🡪 y = 8 Q(-2, 8)

## Isometry

measure

angle

length

Transformation that preserves \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_.

congruence

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ transformation

## Translation Theorem

isometry

A translation is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

# Vector ()

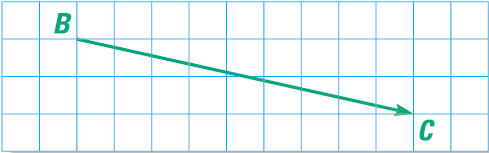
magnitude

direction

Measurement with \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_ (size)

Horizontal component

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



arrow

Represented by an \_\_\_\_\_\_\_\_\_\_\_\_

Initial point

Vertical component

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

vertical

horizontal

Component form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_

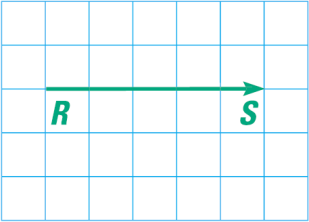
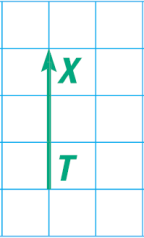
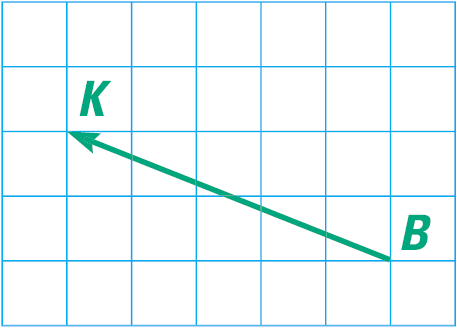
-2

9

Terminal point

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name the vector and write its component form

The vertices of ΔLMN are L(2, 2), M(5, 3), N(9, 1). Translate ΔLMN using vector .

Translation is (x, y)🡪(x-2, y+6)

L’(0, 8), M’(3, 9), N’(7, 7)

Assignment: 576 #2-30 even, 34-40 even, 44, 48-54 even = 24