## Unit 6 Day 1

- Intro to Transformations and Translations

Warm Up

1. Solve for the zeros by factoring: $y=2 x^{2}+4 x-16$
2. Simplify:


$$
\begin{aligned}
& 2\left(x^{2}+2 x-8\right) \\
& 0=2(x+4)(x-2)
\end{aligned}
$$

3. State the transformations: $y=2(x+1)^{2}-5$

$$
2 \geqslant 0 x+4=0 \quad x-2=0
$$



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#### Abstract




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Notes
What does it mean to transform something?
Change from one state to another
Name the types of transformations:
Reflection, Rotation, Translation, Dilation
The original figure is called the Pre-image_and the resulting figure is called the $\qquad$ .

Let's translate this figure by sliding it to the right.
The original is called the pre-image.
The translated figure is called the image.


Notes

## Types of transformations:

After any of these transformations, Rotation the image still has the same size, area, angles, and line lengths as the pre-image.

$$
\begin{aligned}
& \text { Isometrieg } \\
& \text { or rigid motion }
\end{aligned}
$$

## Reflection



Flip!

Translation



Notes

## Types of transformations

After a dilation, the two shapes are no longer the exact same, unlike the previous.

The image after a dilation is similar to its pre-image.


Notes
Types of transformations
Translation:

Rotation: turn, twist around apoint by an angl,
Reflection: counter clockwise
Flip across a line

Dilation:

Notes
What type of transformation are these?


Notes

## Translations

1. Translate $\triangle A B C$ accordina to the rule $T(-3,2)$.



Notes
Translate $\Delta$ ABC T(x+4, y-2)


Notes


# $\mathrm{P}:(-3,-4) \mathrm{Q}:(0,2)$. Plot $\overline{P Q}$ and translate $\mathrm{T}(5,0)$. 

Notes
$\triangle \mathrm{MNO}$ has vertices $\mathrm{M}:(-3,7), \mathrm{N}:(4,0), \mathrm{O}:(5,-3)$. State the new coordinates for each point under the translation

$$
(x, y) \rightarrow(x-3, y-4)
$$

$$
\begin{array}{ccc}
M:(-3,7) & N!(4,0) & O:(5,-3) \\
M:(-3-3,7-4) & N:(4-3,0-4) & 0!(5-3,-3-4) \\
m!(-6,3) & N!(1,-4) & 0!(2,-7)
\end{array}
$$

Notes
$\overline{R S}$ has vertices $\mathrm{R}:(9,-6), \mathrm{S}:(6,5)$. State the new coordinates for each point under the translation right 3 units and down 2 units.


Notes - You Try!
Translate 3 right and 2 down.


Translate 2 left and 6 down.


Notes
Describe the translation using any notation.


## Notes

Describe the translation using any notation.



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