

READY, SET, GO!

Name _____

Period _____

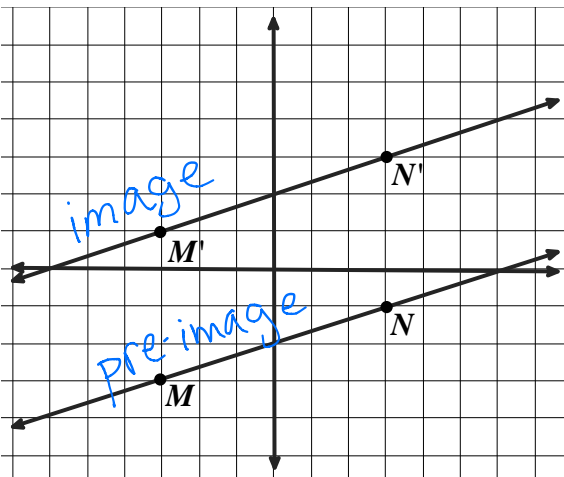
Date _____

READY

Topic: Transformations of lines, connecting geometry and algebra.

For each set of lines use the points on the line to determine which line is the image and which is the pre-image, write image by the image line and pre image by the original line. Then define the transformation that was used to create the image. Finally find the equation for each line.

1.



a. Description of Transformation:

Translation $(x+0, y+4)$

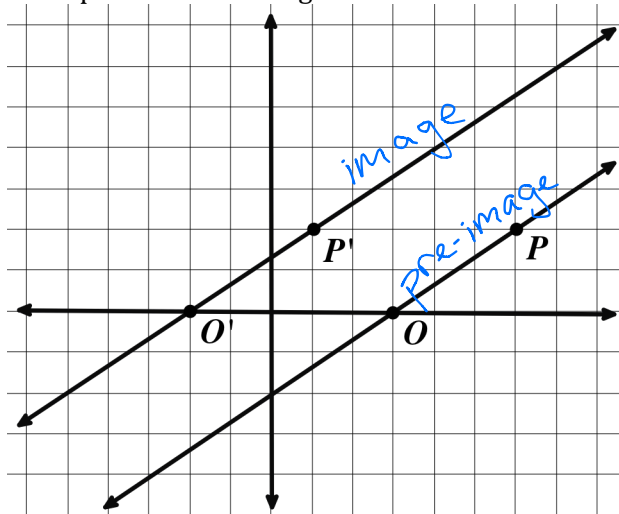
b. Equation for pre-image:

$$y = \frac{1}{3}x - 2$$

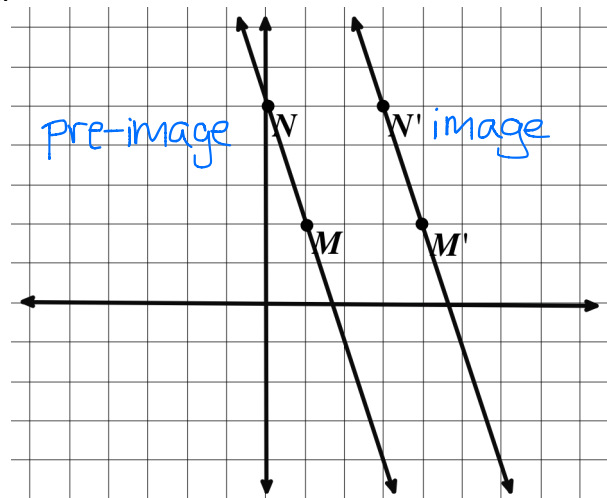
c. Equation for image:

$$y = \frac{1}{3}x + 2$$

Use for problems 3 through 5.



2.



a. Description of Transformation:

Translation $(x+3, y+0)$

b. Equation for pre-image:

$$y = -3x + 5$$

c. Equation for image:

$$y = -3(x-3) + 5$$

3. a. Description of Transformation:

Translation $(x+5, y+0)$

b. Equation for pre-image:

$$y = \frac{2}{3}x - 2$$

c. Equation for image:

$$y = \frac{2}{3}(x-1) + 2$$

4. Write an equation for a line with the same slope that goes through the origin.

$$y = \frac{2}{3}x$$

5. Write the equation of a line perpendicular to these and through the point O'.

$$y = -\frac{3}{2}(x+2) + 0$$

After working with these equations and seeing the transformations on the coordinate graph it is good timing to consider similar work with tables.

6. Match the table of values below with the proper function rule.

I **B** II **C** III **A** IV **E** V **D**

x	f(x)
-1	16
0	14
1	12
2	10

x	f(x)
-1	14
0	12
1	10
2	8

x	f(x)
-1	12
0	10
1	8
2	6

x	f(x)
-1	10
0	8
1	6
2	4

x	f(x)
-1	8
0	6
1	4
2	2

- A. $f(x) = -2(x - 1) + 8$ D. $f(x) = -2(x + 1) + 8$
 B. $f(x) = -2(x - 1) + 12$ E. $f(x) = -2(x + 1) + 10$
 C. $f(x) = -2(x - 2) + 8$

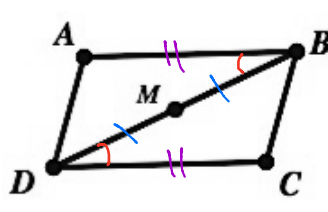
SET

Topic: Use Triangle Congruence Criteria to justify conjectures.

In each problem below there are some true statements listed. From these statements a conjecture (a guess) about what might be true has been made. Using the given statements and conjecture statement create an argument that justifies the conjecture.

7. True statements:

- ★ Point M is the midpoint of \overline{DB}
- ★ $\angle ABD \cong \angle BDC$
- ★ $\overline{AB} \cong \overline{DC}$



Conjecture: $\angle A \cong \angle C$

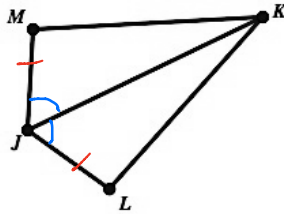
a. Is the conjecture correct?
YES

b. Argument to prove you are right:
 $\overline{BD} \cong \overline{BD}$
 So by SAS, $\triangle ABD \cong \triangle CDB$
 So $\angle A \cong \angle C$.

8. True statements

★ $\angle KJL \cong \angle KJM$

★ $\overline{JL} \cong \overline{JM}$



Conjecture: \overline{JK} bisects $\angle MKL$

a. Is the conjecture correct?

YES

b. Argument to prove you are right:

$\overline{JK} \cong \overline{JK}$

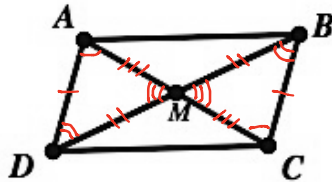
So by SAS, $\triangle JKM \cong \triangle JKL$

So $\angle MKJ \cong \angle LKJ$

So \overline{JK} bisects $\angle MKL$.

9. True statements

$\triangle ADM$ is a 180°
 rotation of $\triangle CMB$



Conjecture: $\triangle ABM \cong \triangle CDM$

a. Is the conjecture correct?

YES

b. Argument to prove you are right:

When rotated 180° , A' lands on C
 and B' lands on D

So by SSS, $\triangle ABM \cong \triangle CDM$.

GO

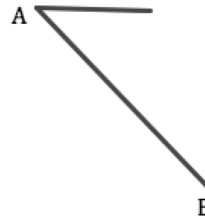
Topic: Constructions with compass and straight edge.

10. Why do we use a geometric compass when doing constructions in geometry?

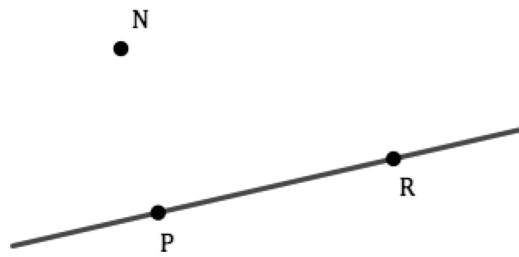
The compass can maintain a consistent radius, which allows us to use congruent circles to construct congruent segments and angles.

Perform the indicated constructions using a compass and straight edge.

11. Construct a rhombus, use segment AB as one side and angle A as one of the angles.



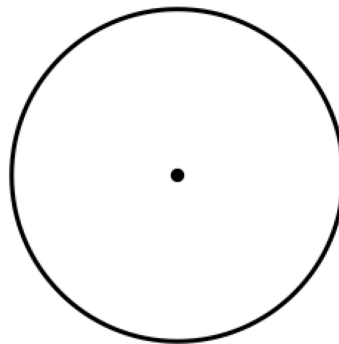
12. Construct a line parallel to line PR and through the point N.



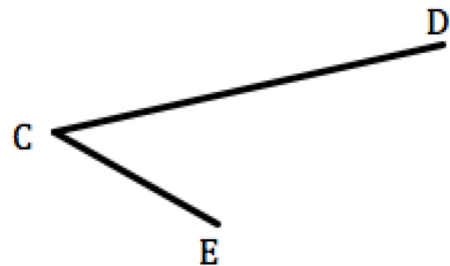
13. Construct an equilateral triangle with segment RS as one side.



14. Construct a regular hexagon inscribed in the circle provided.



15. Construct a parallelogram using CD as one side and CE as the other side.



16. Bisect the line segment LM.



17. Bisect the angle RST.

