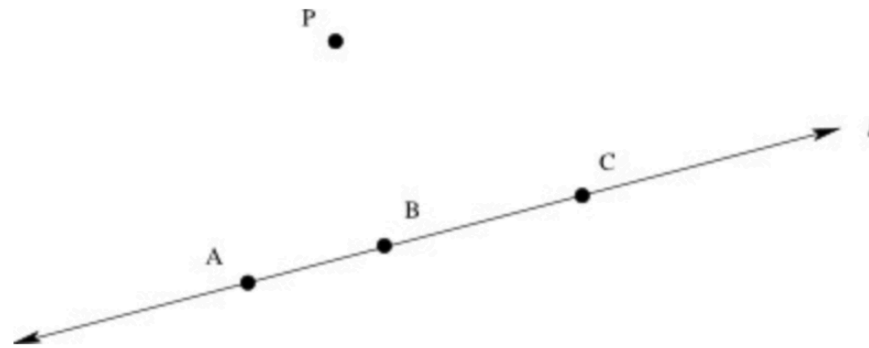


Dilating a Line

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Block: \_\_\_\_\_



- Using  $P$  as your Center of Dilation, dilate points  $A$ ,  $B$ , and  $C$  with a Scale Factor of 2. Name your new points  $A'$ ,  $B'$ , and  $C'$  and connect them to form a new line. Call the new line  $m$ .
- Looking at your picture from part a, fill in the chart below:

Lengths to Explore	Observations Made	Conjectures
PA & PA'		
PB & PB'		
PC & PC'		
AB & A'B'		
BC & B'C'		
AC & A'C'		

- What relationship do you think exists between line  $l$  and line  $m$ ?

- d. Given the picture below, dilate the points on line  $z$  by a Scale Factor of 3 with Center of Dilation at  $X$ . Call your new line  $y$ . Do your observations and conjectures from part b hold true for the points on line  $y$ ?



- e. Your teacher tells you that segment  $XC$  is perpendicular to line  $z$ . Johnny makes the conjecture that if this is true, then segment  $XC'$  is perpendicular to line  $y$ . Do you agree or disagree? Support your argument with mathematical reasoning.
- f. June makes the claim that angle  $XDE$  is congruent to angle  $XD'E'$  by the Corresponding Angles Postulate. Explain why June's claim is correct. Go back to your picture and using a colored pencil, identify all pairs of angles that are congruent based on June's reasoning.