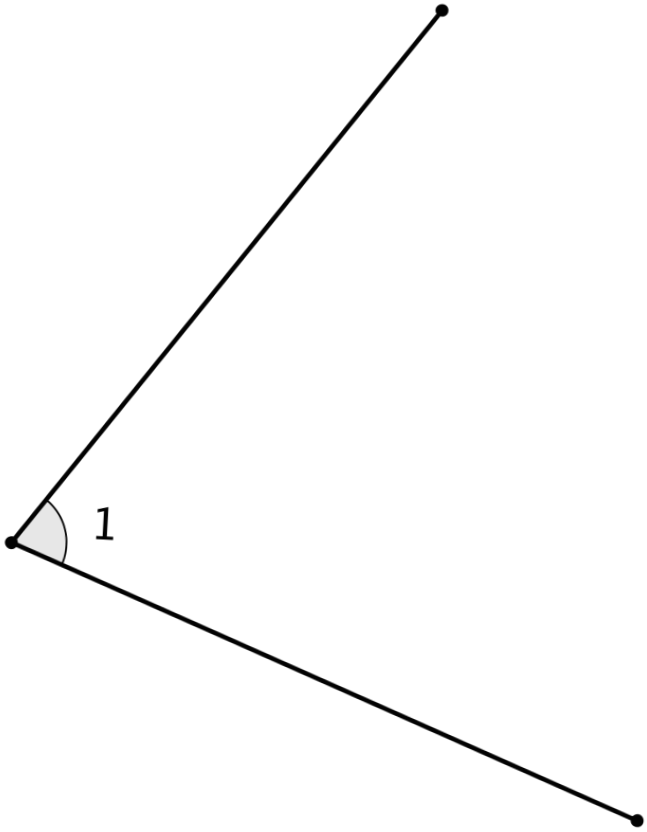
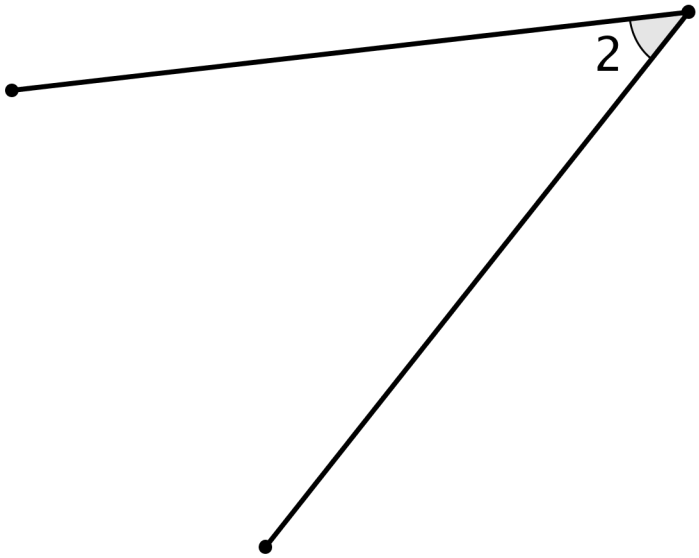
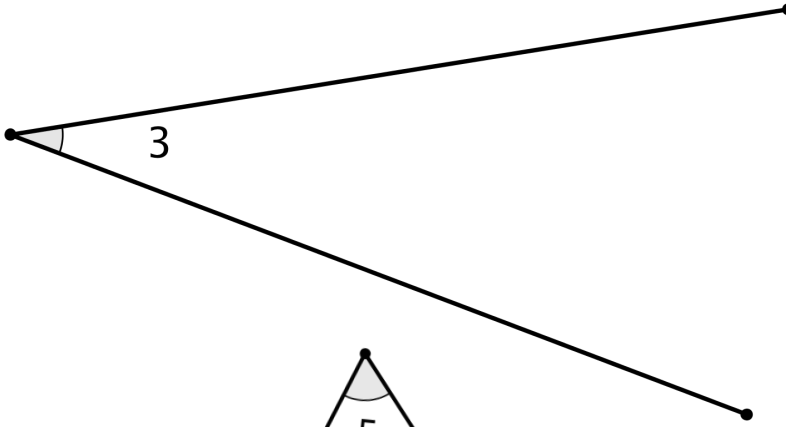
A Better Way to Teach Radian Measure

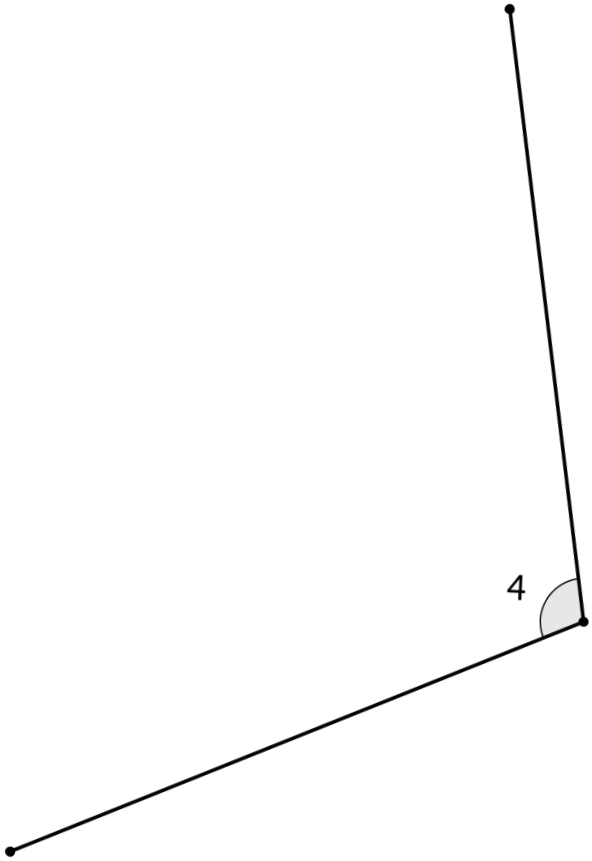
Activity 1: Use ProRadian2 Measure each angle and identify the angle pairs:

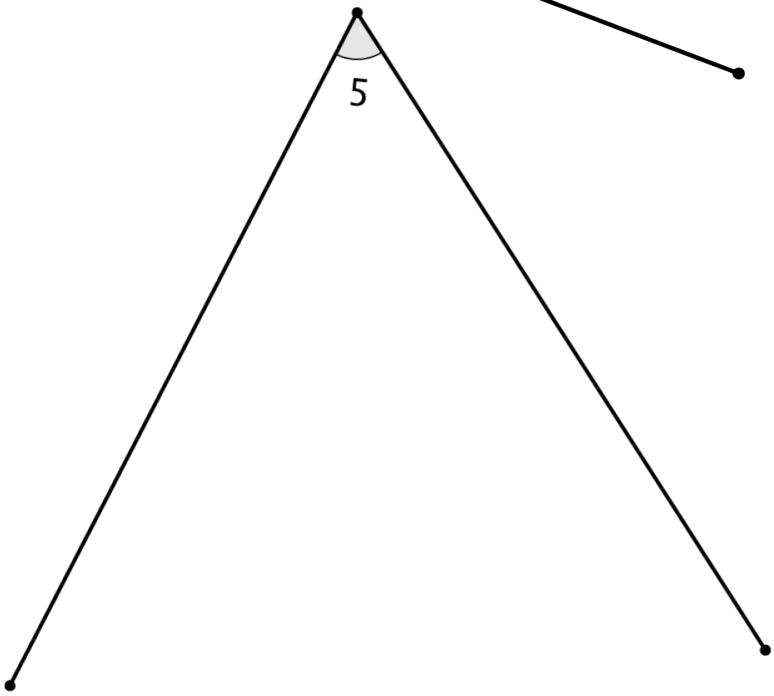
Supplements: _____ Complements: _____











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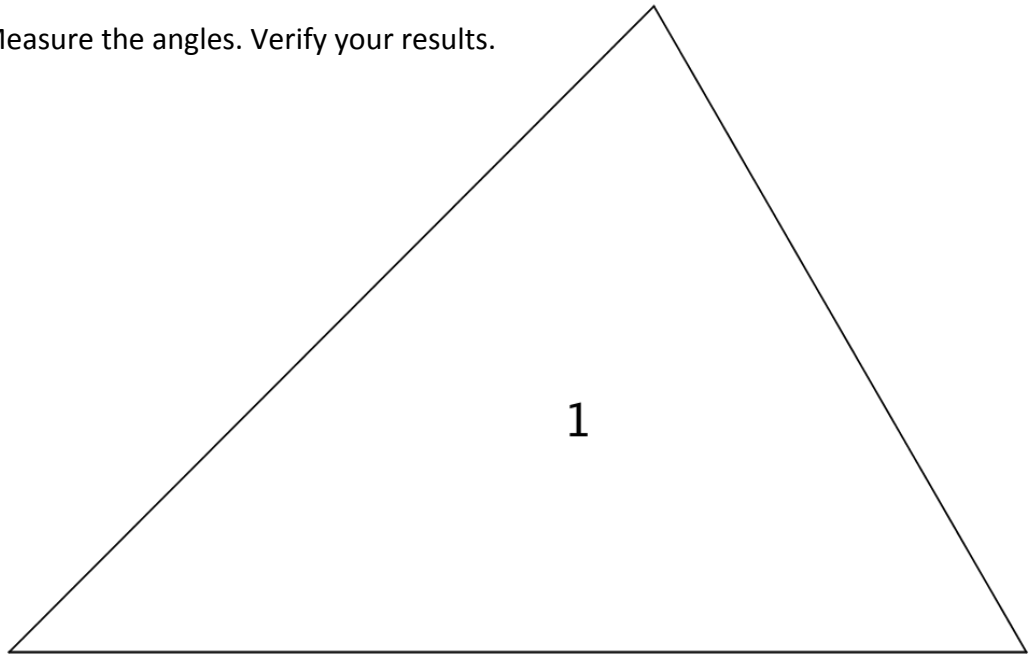
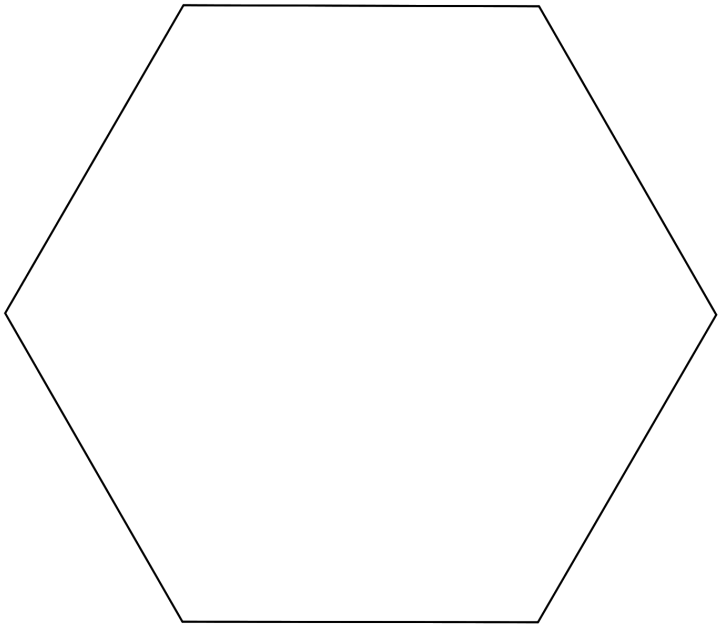
Activity 2: Use ProRadian2 Measure the angles. Verify your results.



Activity 3: Use ProRadian2 Measure the angles in the regular hexagon. Complete the table in terms of π.



Regular Polygon	Sum of Int. Angles	One Interior Angle
triangle		
square		
pentagon		
hexagon		
octagon		
decagon		
n-gon		

Describe any patterns you see.

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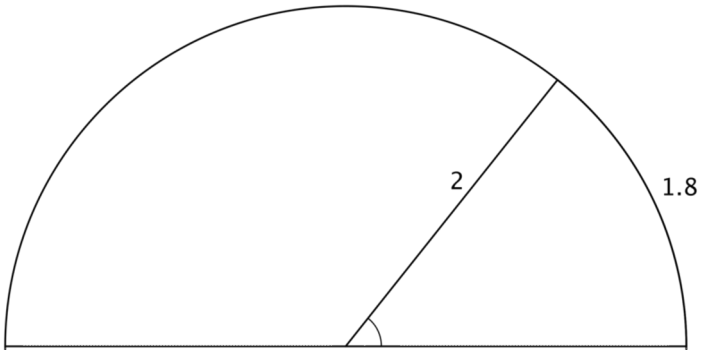
Activity 4: Use ProRadian1

Measure the angle. Then, write the equation that connects the measures of the intercepted arc, the radius, and the central angle. Arrange the equation in three different ways.

_____

_____

_____

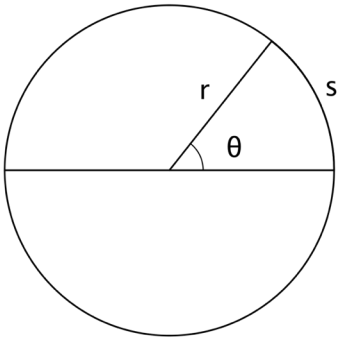


Write the 3 **general** rules that connect the measures of the arc length (S), the radius (r), and the angle (θ).

θ = _____

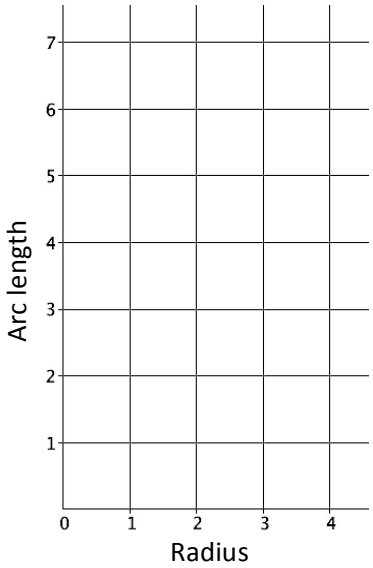
S = _____

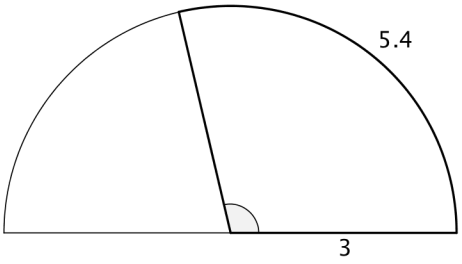
r = _____

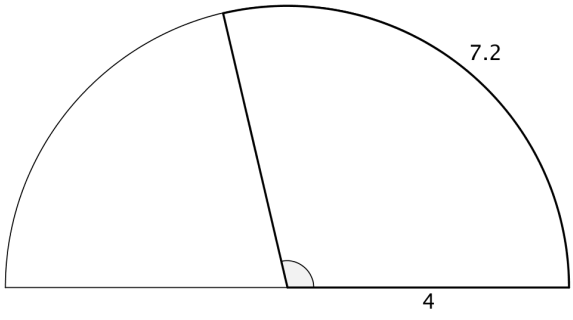


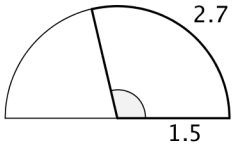
Use the 4 diagrams to complete the table and graph.

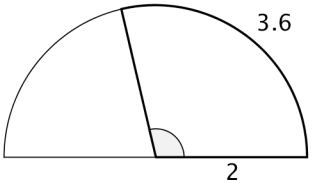
θ = _____		
s	r	s/r











How is the slope of the line related to the variables θ, r, and s?

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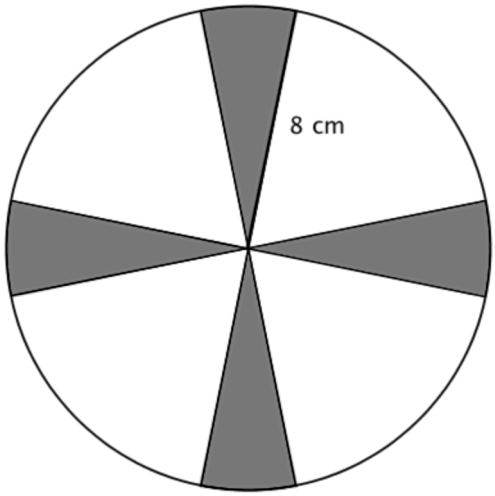
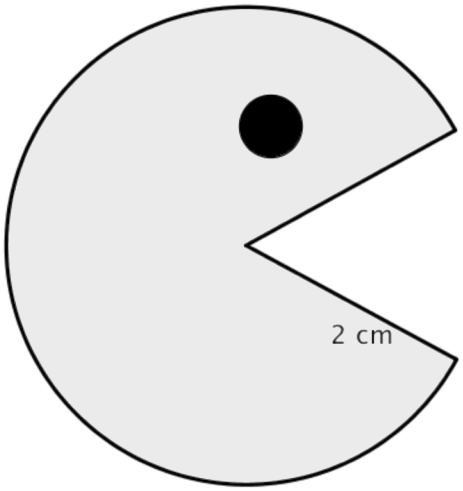
Activity 5: Use ProRadian2 Measure the angles and find the areas of each of the following figures.

Find the total area of the darker stripes.



Find the area of Pac-Man.



Activity 6: Use ProRadian1 Place the protractor on this grid. Use it to find the inverse trig functions - like when your calculator is in radian mode.

$\cos^{-1}(0.6) \approx$

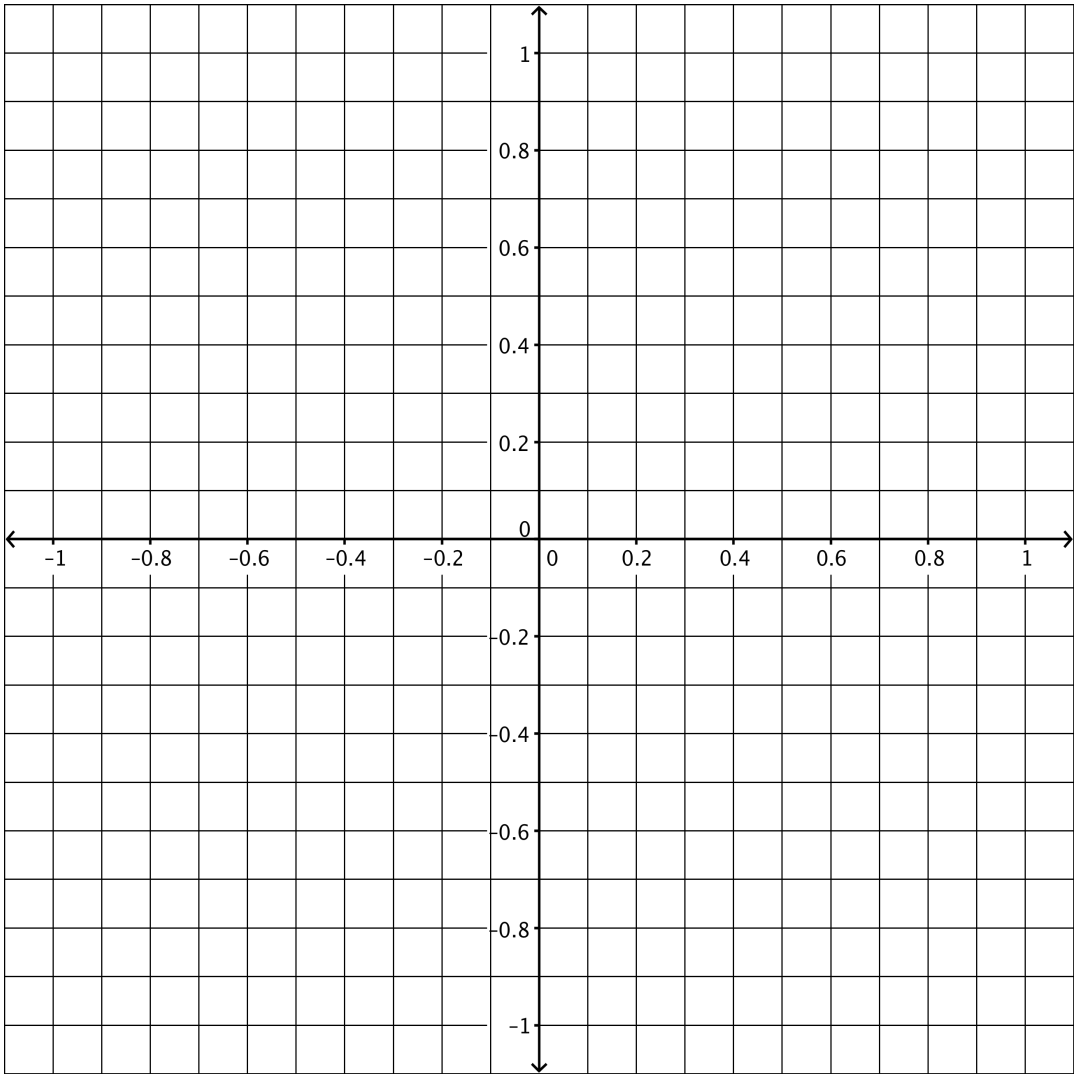
$\sin^{-1}(-0.2) \approx$

$\cos^{-1}(-0.8) \approx$

$\sin^{-1}(0.4) \approx$

$\arccos(-0.5) \approx$

$\arcsin(0.3) \approx$



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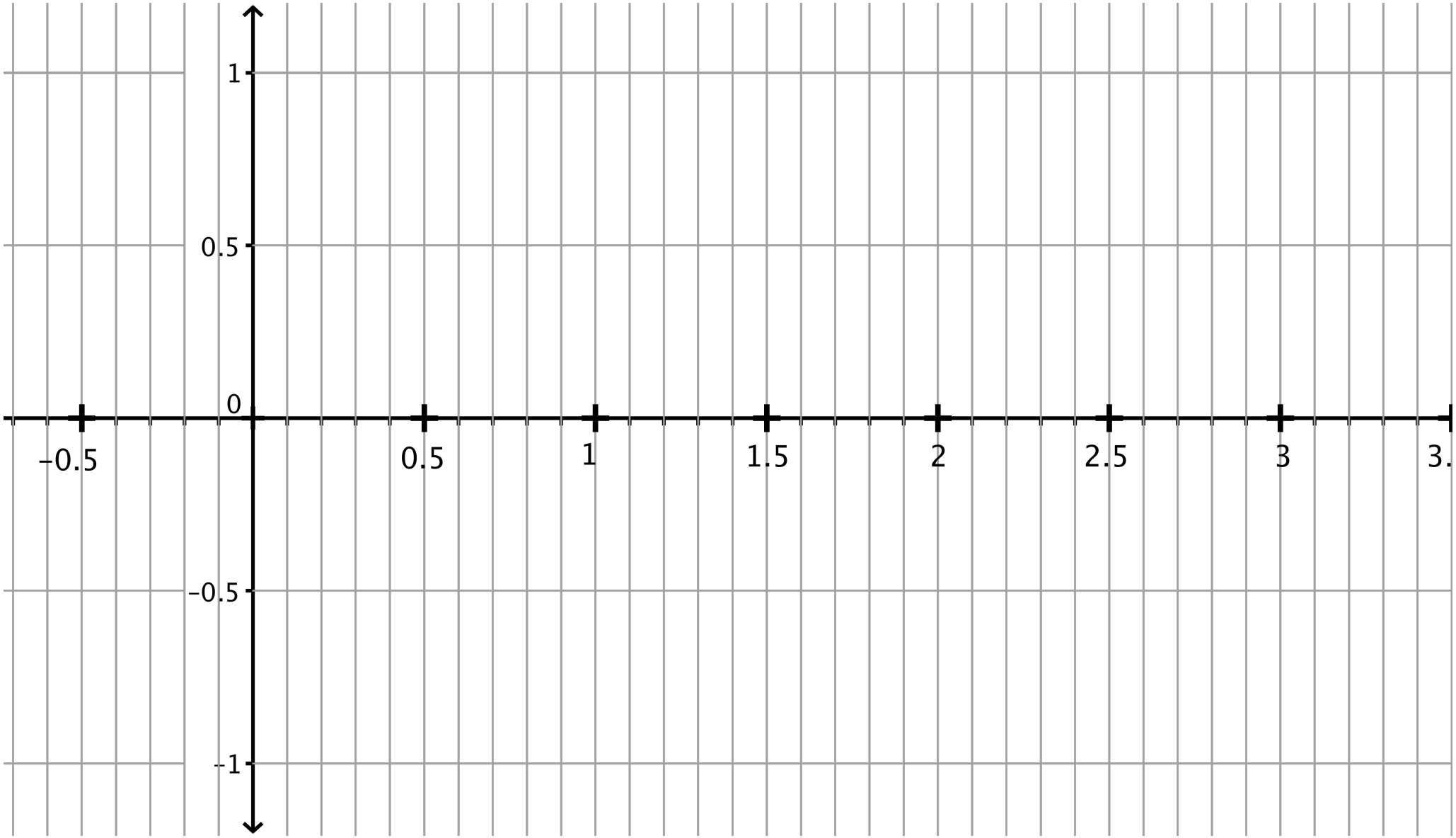

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