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| **Notes – Sector Area & Arc Length** | **Name:** | **Th** |
| **Standard:**  | **Hour:** |

**Objective:** I know how to calculate arc length and sector area.

Given arc length or sector area, I can find the radius, central angle, total area or circumference.

**Review & Connect**

**Sectors and Arc Length**

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| Circumference of a Circle$$C=2πr$$Find the length of arc AB.

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| ABA5cm |
| AB7cm |
| 1. Diameter 12m.

B120o |

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| 1. Complete the formula for arc length

$$L=\frac{ }{}∙ $$ |
| 1. Find the arc length of a 288o central angle and a radius of 15.
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 | Area of a Circle$$A=πr^{2}$$Find the area of each sector (shaded region).

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| 5cmABA |
| 14cmAB |
| B6cm120o |

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| 1. Write a formula for sector area.

$$S=\frac{ }{}∙ $$ |
| 1. Find the area of a 288o sector with a radius of 15.
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**Examples**

Find each indicated value. Show ALL work! Give answers as an exact value (fractions and in terms of pi).

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| 1. Find the area of the sector

 | 1. Find the area of the sector.

 |
| 1. Find the area of the shaded sectors. Radius = 24

50ᵒ40ᵒ | 1. Find the area of the circle if a sector has a central angle of 90ᵒ and an area of $27π$ km2.

$$3π$$ |
| 1. Find the radius of the circle if a sector has a central angle of 240ᵒ and a sector area of 150π km2.
 | 1. The length of minor arc AB is $3π$ and measures 45$°$.

a) What is the circumference of the circle?b) What is the measure of the radius of the circle?c) What is the area of the sector AOB? |

**Hmwk – Sectors Area & Arc Length** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_















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| 1. Minor arc AB has an arc length of 8π ft and a measure of 60$°$.
2. What is the total circumference?
3. What is the length of the radius?
4. What is the area of sector AOB?
 | $$8π$$ |
| **16.** Sector AOB has an area of 16π mi2 and a central angle of 40$°$ 1. What is the total area?
2. What is the length of the radius?
3. What is the length of minor arc AB?
 | $$16π$$ |