

DO NOW:

① HOW MANY DEGREES
IN A CIRCLE?

② HOW IS "PI" DESCRIBED?
(HOW DO WE KNOW WHAT PI IS WORTH?)

DO NOW:

① How MANY DEGREES
IN A CIRCLE? 360°

② How IS "PI" DESCRIBED?
(How DO WE KNOW WHAT PI IS WORTH?)

DO NOW:

① How MANY DEGREES
IN A CIRCLE? 360°

② How IS "PI" DESCRIBED? RATIO: —
(HOW DO WE KNOW WHAT PI IS WORTH?)

DO NOW:

① How MANY DEGREES
IN A CIRCLE? 360°

② How IS "PI" DESCRIBED? RATIO: $\frac{C}{d}$
(HOW DO WE KNOW WHAT PI IS WORTH?)

DO NOW:

② How is "PI" DESCRIBED?
(HOW DO WE KNOW WHAT PI IS WORTH?)

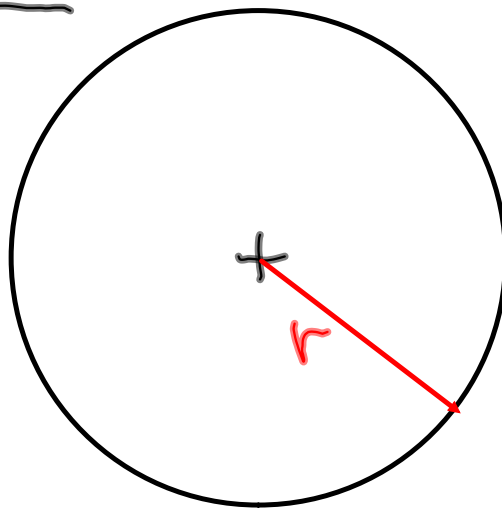
$$\pi = \frac{C}{d}$$

RATIO: $\frac{C}{d}$

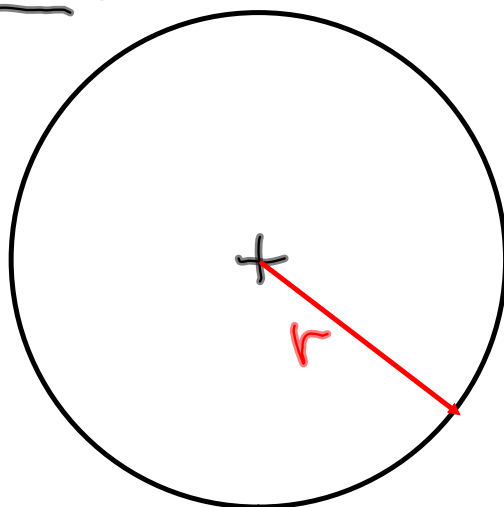
$$C = \pi d$$

$$C = \pi(2r)$$

RADIANS:

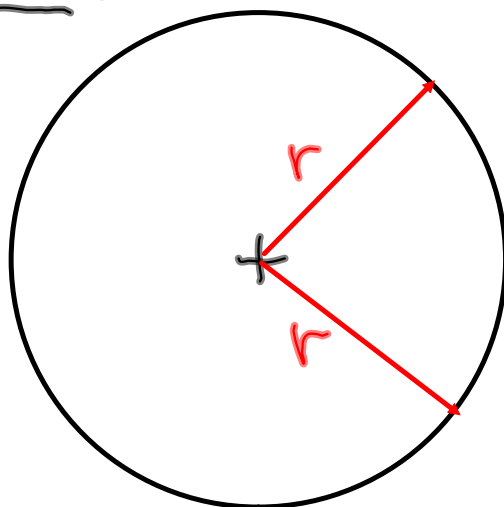


RADIANS:

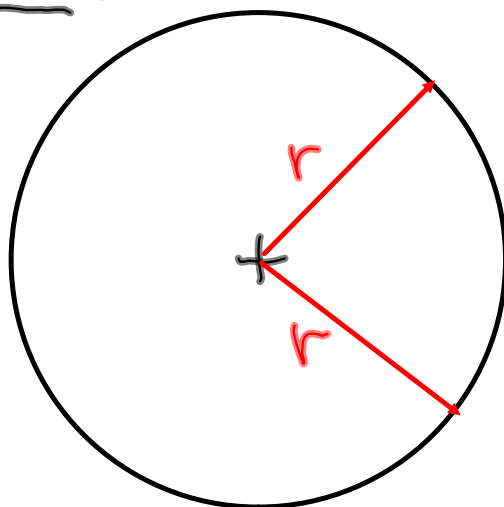


IF I MAKE A
ANGLE WITH
IT VERTEX AT
CENTER OF \odot

RADIANS:

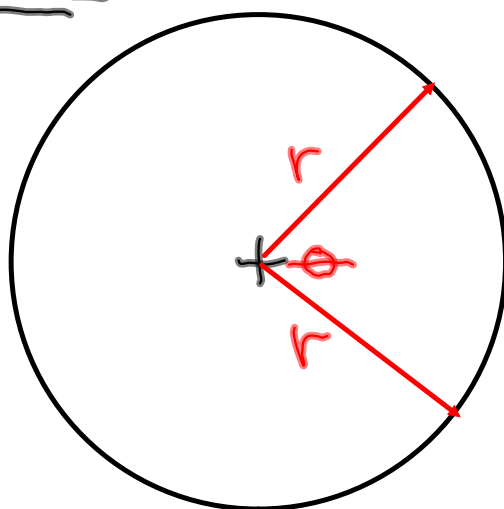


IF I MAKE A
ANGLE WITH
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RADIANS:

IF I MAKE A
ANGLE WITH
IT VERTEX AT
CENTER OF \odot

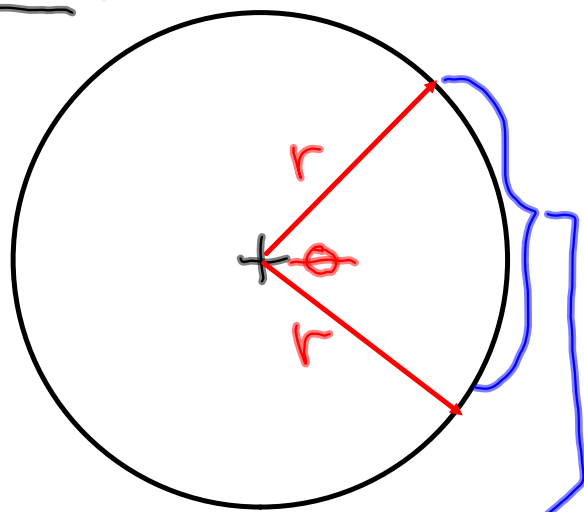
I CALL THIS
A "CENTRAL \angle "
 θ

RADIANS:

IF I MAKE A
ANGLE WITH
IT VERTEX AT
CENTER OF \odot

I CALL THIS
A "CENTRAL θ "
 θ

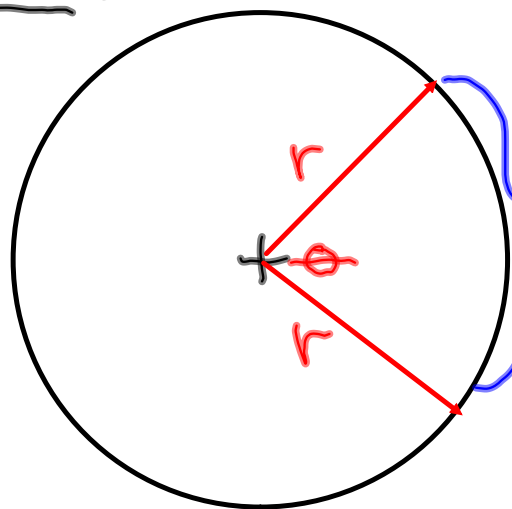
RADIANS:



IF I MAKE A
 ANGLE WITH
 IT VERTEX AT
 CENTER OF \odot
 I CALL THIS
 A "CENTRAL θ "
 θ

THE PIECE OF THE \odot
 THAT θ INTERCEPTS IS
 THE "ARC" OF θ

RADIANS:



IF I MAKE A
ANGLE WITH
IT VERTEX AT
CENTER OF \odot

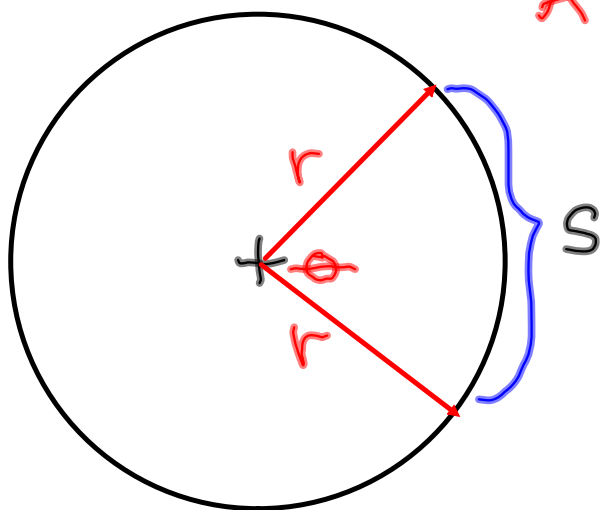
I CALL THIS
A "CENTRAL θ "
 θ

THE PIECE OF THE \odot
THAT θ INTERCEPTS IS
THE "ARC" OF θ

THIS HAS A
LENGTH WHICH WE
CALL "ARC LENGTH"

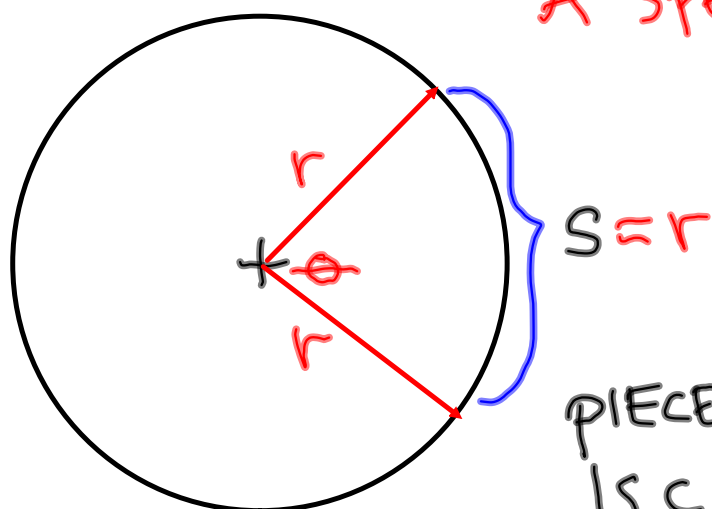
RADIANS:

IF $S = r$ WE HAVE
A SPECIAL SCENARIO...

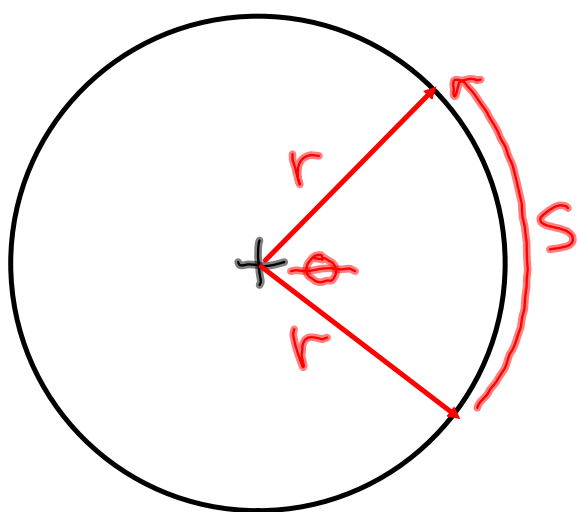


RADIANS:

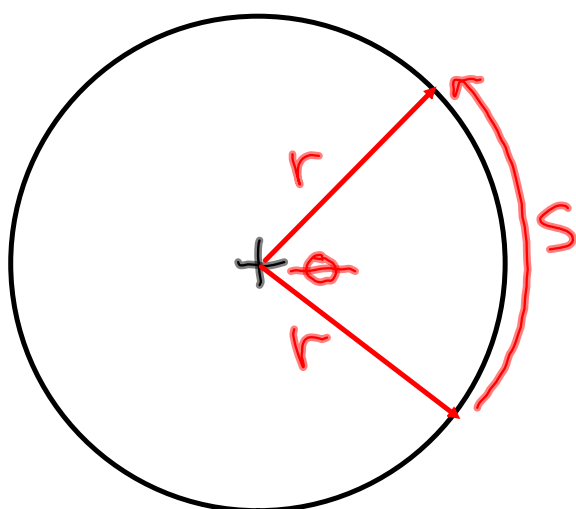
IF $S = r$ WE HAVE
A SPECIAL SCENARIO...



PIECE OF THE CIRCLE
IS CALLED A "SECTOR"

RADIANS:

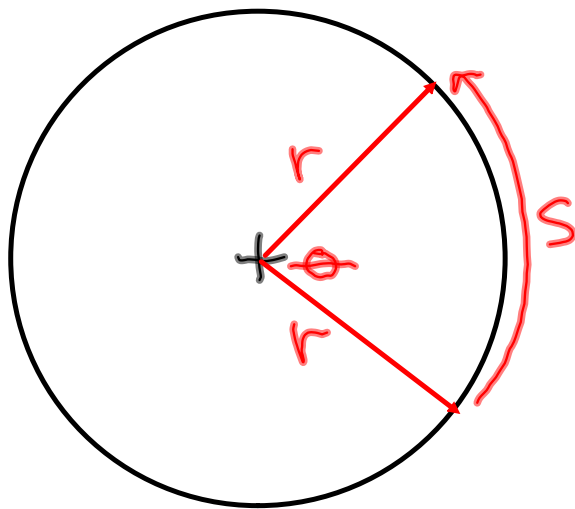
A SECTOR WHOSES
ARC LENGTH IS EQUAL
TO ITS RADIUS IS
CALLED Δ°

RADIANS:

A SECTOR WHOSES
ARC LENGTH IS EQUAL
TO ITS RADIUS IS
CALLED Δ°

"RADIAN"

RADIANS:



A SECTOR WHOSES ARC LENGTH IS EQUAL TO IT'S RADIUS IS CALLED Δ:

"RADIAN"

1 RADIAN =

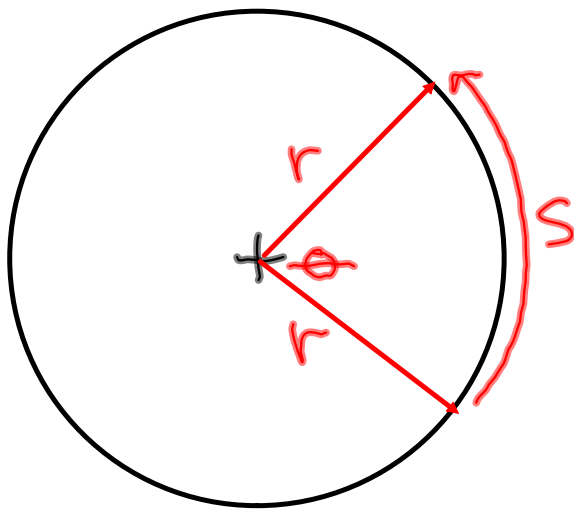
$$\frac{\text{ARCLength}}{\text{RADIUS}}$$



CANCELS

RADIANS:

eg 1 > A.L. = 25 in
 RADIUS = 10 in



HOW MANY RADIANS IS THAT CENTRAL θ ?

"RADIAN"

1 RADIAN = $\frac{\text{ARC LENGTH}}{\text{RADIUS}}$

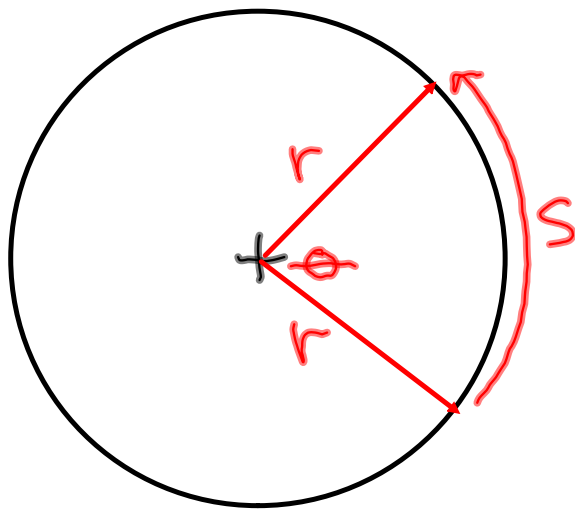
UNIT

 UNIT

← CANCELS

RADIANS:

eg 1 > A.L. = 25 in
RADIUS = 10 in



HOW MANY RADIANS IS THAT CENTRAL θ ?

$$\theta = \frac{25 \text{ in}}{10 \text{ in}} =$$

1 RADIAN = $\frac{\text{ARC LENGTH}}{\text{RADIUS}}$

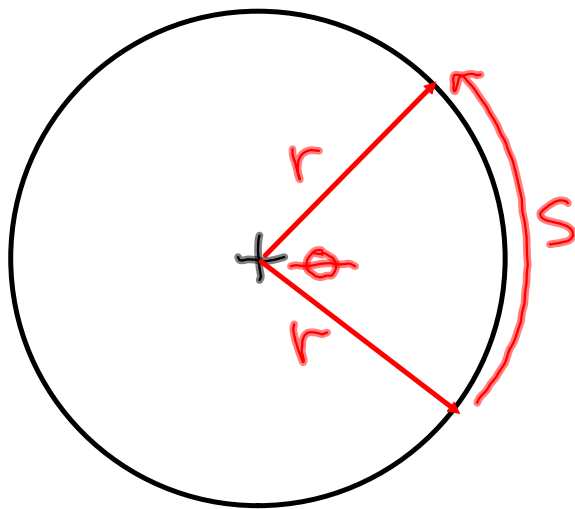
UNIT

 UNIT

← CANCELS

RADIANS:

eg 1 > A.L. = 25 in
RADIUS = 10 in



HOW MANY RADIANS IS THAT CENTRAL θ ?

$$\theta = \frac{25 \cancel{\text{in}}}{10 \cancel{\text{in}}} = \boxed{2.5}$$

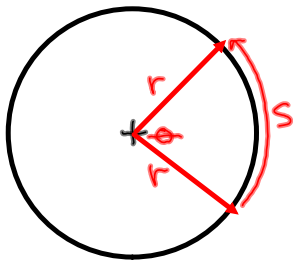
1 RADIAN = $\frac{\text{ARC LENGTH}}{\text{RADIUS}}$

UNIT

 UNIT

← CANCELS

RADIANS:



eg 1 > A.L. = 25 in
RADIUS = 10 in

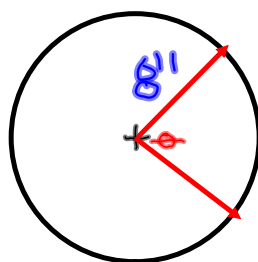
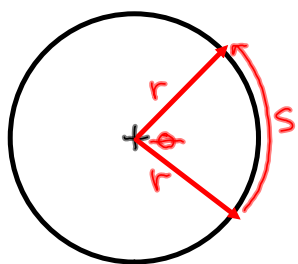
HOW MANY RADIANS IS THAT CENTRAL θ ?

$\theta = 2.5$ radians

1 RADIAN = $\frac{\text{ARC LENGTH}}{\text{RADIUS}}$ $\left(\frac{\text{UNIT}}{\text{UNIT}} \right)$ CANCELS

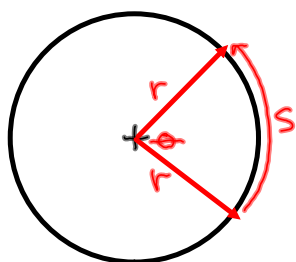
RADIANS:

eg 2 >

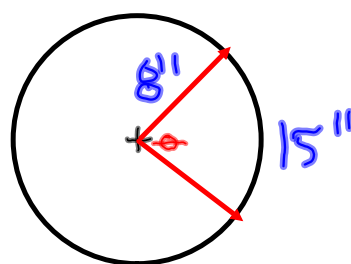


$\theta = ?$

RADIANS:



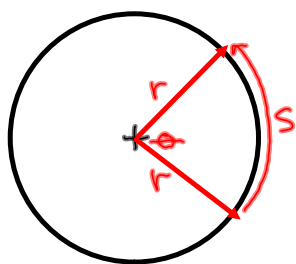
eg 2 >



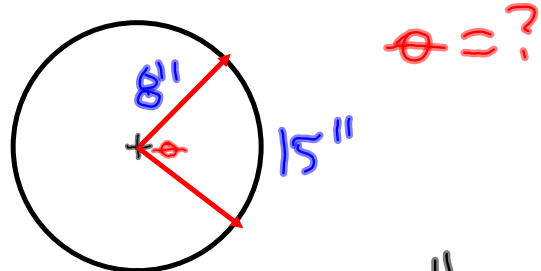
$\theta = ?$

$$\theta = \frac{A.L.}{r} =$$

RADIANS:

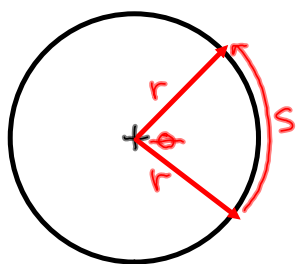


eg 2 >

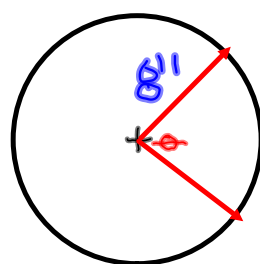


$$\theta = \frac{\text{A.L.}}{r} = \frac{15''}{8''}$$

RADIANS:



eg 2 >

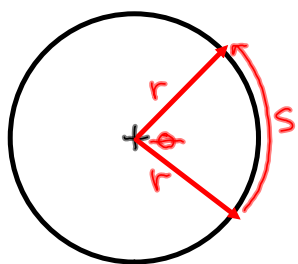


$\theta = ?$

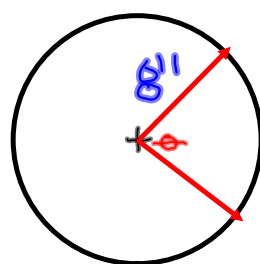
$$\theta = \frac{\text{A.L.}}{r} = \frac{15}{8}$$

\approx

RADIANS:



eg 2 >

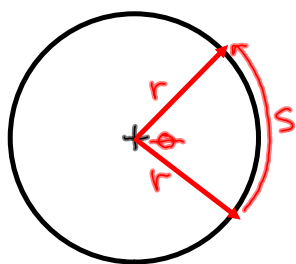


$\theta = ?$

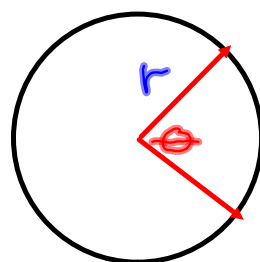
$$\theta = \frac{\text{A.L.}}{r} = \frac{15}{8}$$

$$= 1.88$$

RADIANS:



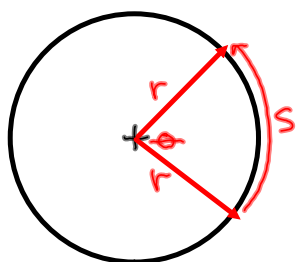
eg 3 >



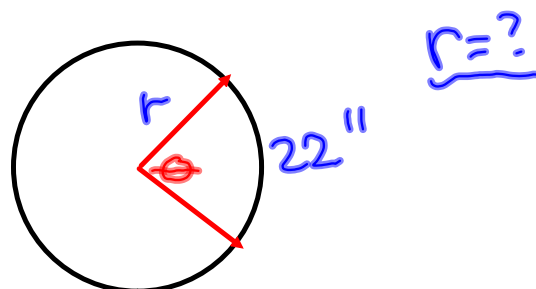
$r = ?$

IF A.L. OF $22''$ AND A
CENTRAL \angle (θ) OF $\frac{\pi}{6}$
FIND THE radius.

RADIANS:



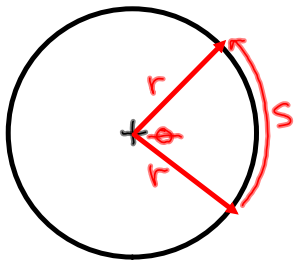
eg 3 >



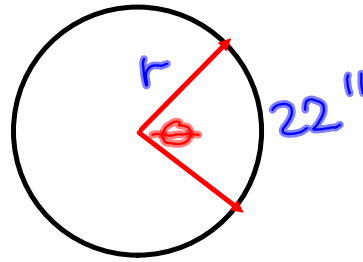
IF A.L. OF $22''$ AND A
CENTRAL \angle (θ) OF $\frac{\pi}{6}$
FIND THE radius.

$$\theta = \frac{\text{A.L.}}{r}$$

RADIANS:



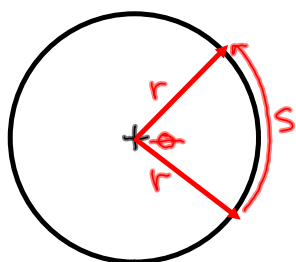
eg 3 >



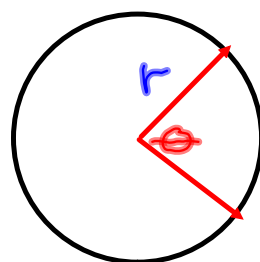
$r = ?$

IF A.L. OF $22''$ AND A
CENTRAL \angle (θ) OF $\frac{\pi}{6}$
FIND THE radius.

$$(r) \theta = \frac{\text{A.L.}}{r} \quad (\times)$$

RADIANS:

eg 3 >

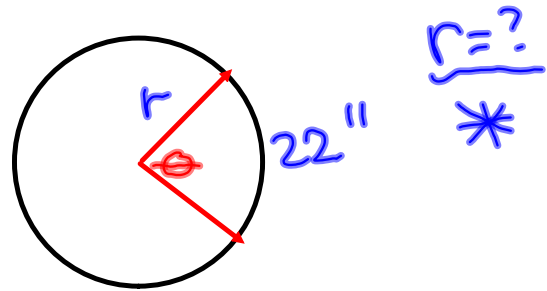
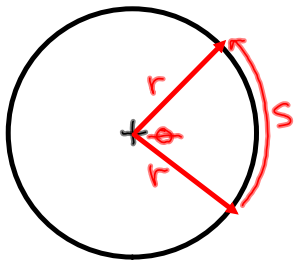
 $r = ?$

IF A.L. OF $22''$ AND A
CENTRAL \angle (θ) OF $\frac{\pi}{6}$
FIND THE radius.

$$(r) \theta = A.L.$$

RADIANS:

eg 3 >

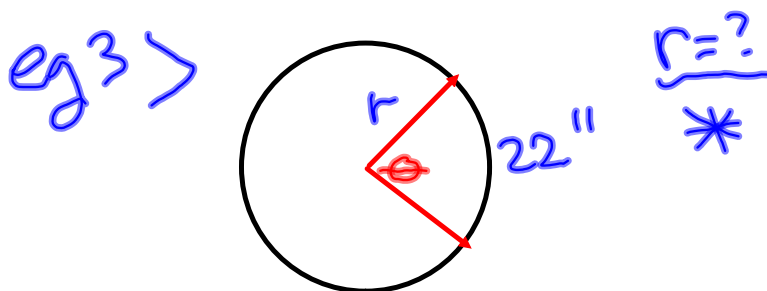
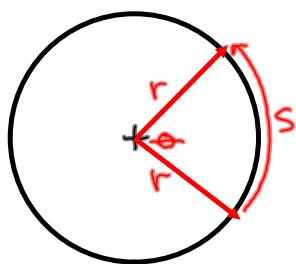


IF A.L. OF $22''$ AND A
CENTRAL \angle (θ) OF $\frac{\pi}{6}$
FIND THE radius.

*
↓

$$\frac{(r) \cancel{\theta}}{\cancel{\theta}} = \frac{A.L.}{\theta}$$

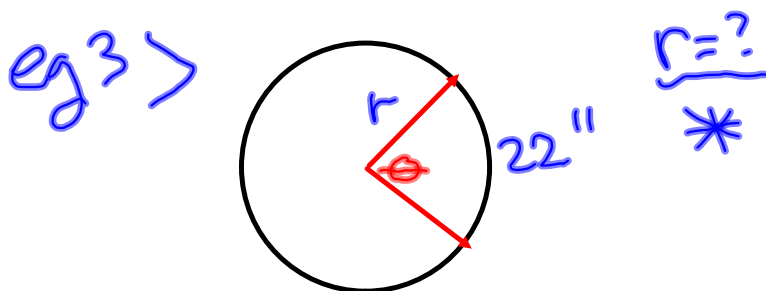
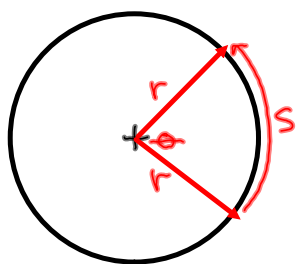
RADIANS:



IF A.L. OF 22" AND A
CENTRAL \angle (θ) OF $\frac{\pi}{6}$
FIND THE radius.

$$r = \frac{\text{A.L.}}{\theta}$$

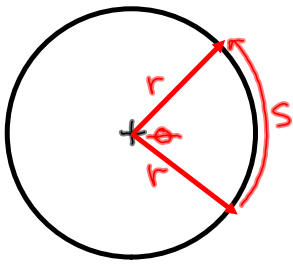
RADIANS:



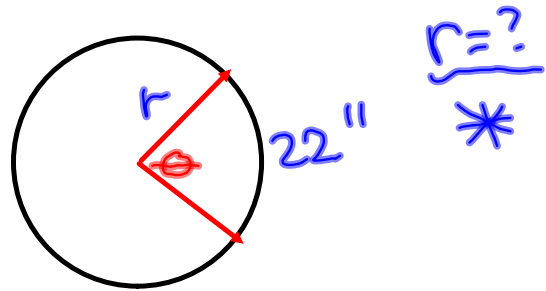
IF A.L. OF 22" AND A
CENTRAL \angle (θ) OF $\frac{\pi}{6}$
FIND THE radius.

$$r = \frac{\text{A.L.}}{\theta} = \frac{22''}{\frac{\pi}{6}}$$

RADIANS:



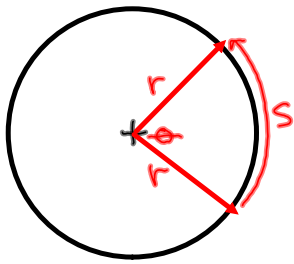
eg 3 >



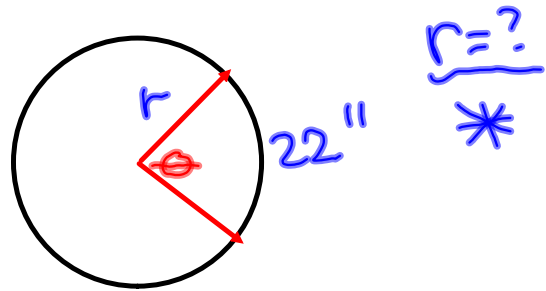
IF A.L. OF $22''$ AND A
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FIND THE radius.

$$r = \frac{\text{A.L.}}{\theta} = \frac{22''}{\frac{\pi}{6}}$$

RADIANS:



eg 3 >

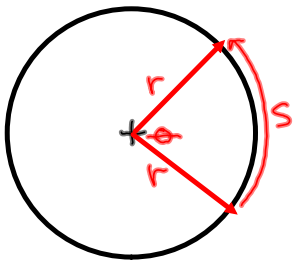


IF A.L. OF $22''$ AND A CENTRAL \angle (θ) OF $\frac{\pi}{6}$ FIND THE radius.

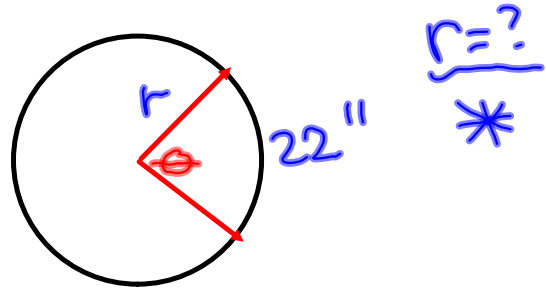
$$r = \frac{A.L.}{\theta} = \frac{22''}{\frac{\pi}{6}}$$

The calculation shows the radius r is equal to the arc length $22''$ divided by the central angle $\frac{\pi}{6}$. A circled '6' with an arrow points to the denominator of the angle, indicating the multiplication step in the calculation.

RADIANS:



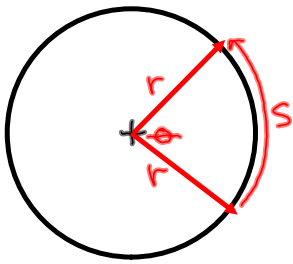
eg 3 >



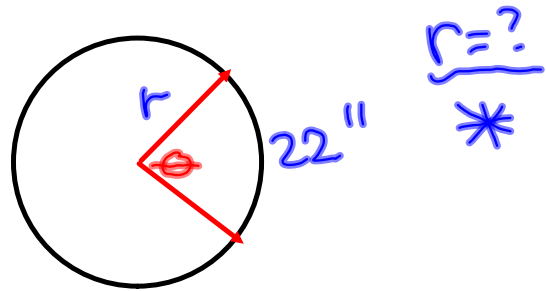
IF A.L. OF 22" AND A
CENTRAL \angle (θ) OF $\frac{\pi}{6}$
FIND THE radius.

$$r = \frac{A.L.}{\theta} = \frac{22''}{\frac{\pi}{6}}$$

RADIANS:

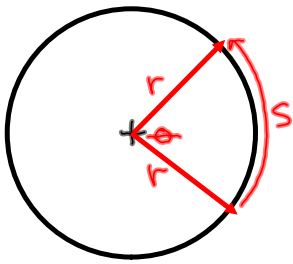


eg 3 >

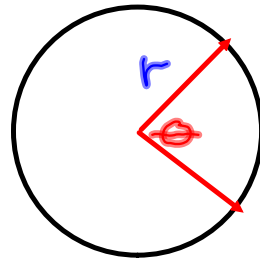


IF A.L. OF 22" AND A
CENTRAL θ OF $\frac{\pi}{6}$
FIND THE radius.

$$r = \frac{A.L.}{\theta} = \frac{132''}{\pi}$$

RADIANS:

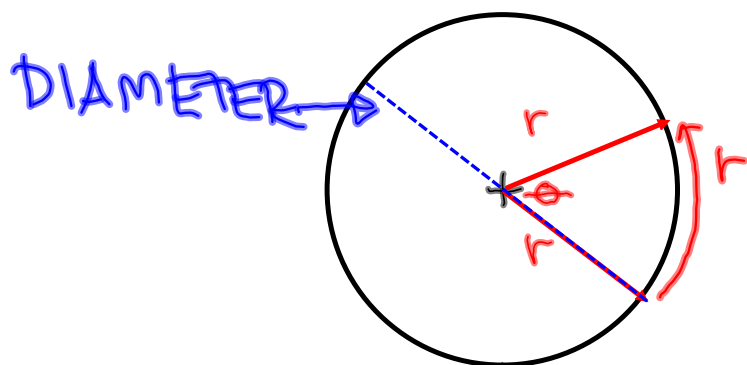
eg 3 >

r = ?
*

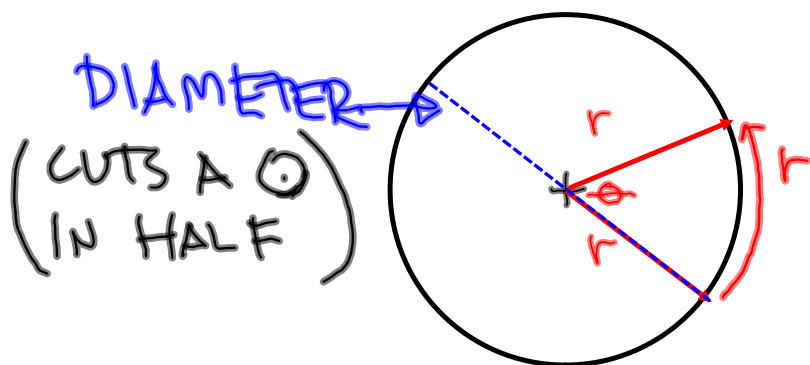
IF A.L. OF 22" AND A
CENTRAL \angle (θ) OF $\frac{\pi}{6}$
FIND THE radius.

$$r = \frac{A.L.}{\theta} = \frac{132''}{\frac{\pi}{6}} = \boxed{42.0''}$$

RADIANS: ~ CONVERSION ~



RADIANS: ~ CONVERSION ~



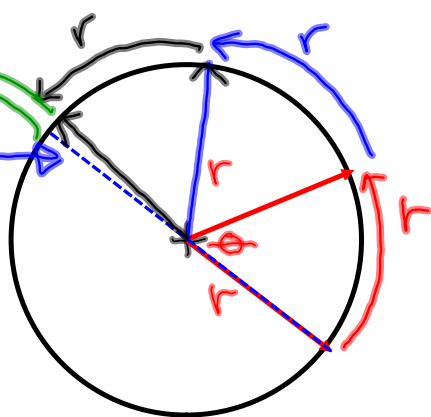
RADIANS:

~ CONVERSION ~

0.1415r

DIAMETER

(CUTS A \odot
IN HALF)

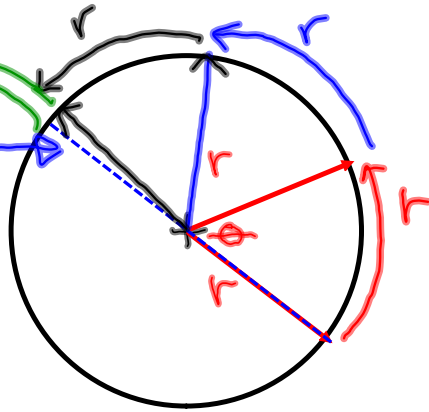


$3.14 \text{ radius} = \frac{1}{2} \odot$

RADIANS:

~ CONVERSION ~

0.1415r
 DIAMETER
 (CUTS A \odot
 IN HALF)

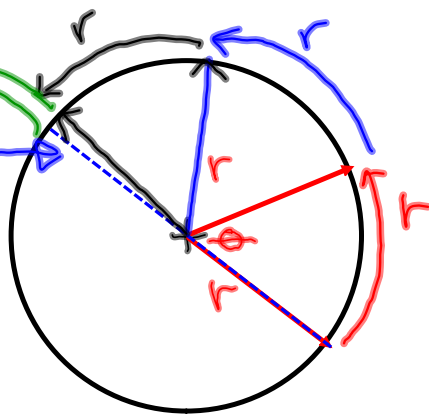


3.14 radius = $\frac{1}{2} \odot$
 $\pi =$

RADIANS:

~ CONVERSION ~

0.1415r
DIAMETER
(CUTS A \odot
IN HALF)



3.14 radius = $\frac{1}{2} \odot$

$\pi = 180^\circ$
CONVERSION
FACTOR *

RADIANS: ~ CONVERSION ~

eg 4)

$75^\circ \rightarrow$ RADIANS

$\pi = 180^\circ$
CONVERSION
FACTOR *

RADIANS: ~ CONVERSION ~

eg 4)

$75^\circ \rightarrow$ RADIANS

(75°)

$\pi = 180^\circ$
CONVERSION
FACTOR *

RADIANS: ~ CONVERSION ~

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75^\circ}{1} \right)$$

$\pi = 180^\circ$
CONVERSION
FACTOR *

RADIANS: ~ CONVERSION ~

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75^\circ}{1} \right) \left(\quad \right)$$

$\pi = 180^\circ$
CONVERSION
FACTOR *

RADIANS: ~ CONVERSION ~

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75^\circ}{1} \right) \left(\frac{\pi}{180} \right)$$

$\pi = 180^\circ$
CONVERSION
FACTOR *

RADIANS: ~ CONVERSION ~

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75^\circ}{1} \right) \left(\frac{1}{180^\circ} \right)$$

$\pi = 180^\circ$
CONVERSION
FACTOR *

RADIANS: ~ CONVERSION ~

$$\pi = 180^\circ$$

CONVERSION FACTOR *

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75^\circ}{1} \right) \left(\frac{\pi \text{ rad}}{180^\circ} \right)$$

RADIANS: ~ CONVERSION ~

$\pi = 180^\circ$
CONVERSION
FACTOR *

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75^\circ}{1} \right) \left(\frac{\pi \text{ rad}}{180^\circ} \right) =$$

RADIANS: ~ CONVERSION ~

$\pi = 180^\circ$
CONVERSION
FACTOR *

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75}{1} \right) \left(\frac{\pi}{180} \right) = \frac{75 \pi}{180} = ? \pi$$

FOCUS

RADIANS: ~ CONVERSION ~

$\pi = 180^\circ$
CONVERSION FACTOR *

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75}{1} \right) \left(\frac{\pi}{180} \right) = \left(\frac{15}{36} \pi \right) = ? \pi$$

focus

RADIANS: ~ CONVERSION ~

$\pi = 180^\circ$
CONVERSION FACTOR *

eg 4)

75° → RADIANS

$$\left(\frac{75}{1}\right) \left(\frac{\pi \text{ rad}}{180}\right) = \left(\frac{\overset{5}{\cancel{15}} \cancel{75} \pi}{\cancel{180}}\right) = ? \pi$$

focus 12

RADIANS: ~ CONVERSION ~

$\pi = 180^\circ$
CONVERSION FACTOR *

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75}{1} \right) \left(\frac{\pi \text{ rad}}{180} \right) = \left(\frac{\cancel{15}^5}{\cancel{75}^{15}} \frac{\pi}{\cancel{180}^{36} 12} \right) = \boxed{\frac{5\pi}{12}}$$

RADIANS: ~ CONVERSION ~

$\pi = 180^\circ$
CONVERSION FACTOR *

eg 4)

$75^\circ \rightarrow$ RADIANS

$$\left(\frac{75}{1} \right) \left(\frac{\pi \text{ rad}}{180} \right) = \left(\frac{\cancel{15}^5}{\cancel{75}^{12}} \pi \right) \left(\frac{\cancel{180}^{12}}{\cancel{36}^{12}} \right) = \frac{5\pi}{12}$$

≈ 1.30 *

RADIANS: ~ CONVERSION ~

eg 5 >

$$\frac{3\pi}{2} \rightarrow \text{DEGREES}$$

$\pi = 180^\circ$
CONVERSION
FACTOR *

RADIANS: ~ CONVERSION ~

eg 5 >

$$\frac{3\pi}{2} \rightarrow \text{DEGREES}$$

$$\left(\frac{3\pi}{2} \right)$$

$\pi = 180^\circ$
CONVERSION
FACTOR *

RADIANS: ~ CONVERSION ~

eg 5 >

$\pi = 180^\circ$
CONVERSION
FACTOR *

$\frac{3\pi}{2}$ → DEGREES

$\left(\frac{3\pi}{2}\right) \left(\frac{\pi}{\pi}\right)$

(RAD) *(RAD)*

RADIANS: ~ CONVERSION ~

eg 5 >

$\pi = 180^\circ$
CONVERSION
FACTOR *

$\frac{3\pi}{2}$ → DEGREES

$\left(\frac{3\pi}{2}\right) \left(\frac{180^\circ}{\pi}\right)$

Annotations:
- A red cloud labeled "RAD" points to the π in the denominator of the first fraction.
- A red cloud labeled "RAD" points to the π in the denominator of the second fraction.

RADIANS: ~ CONVERSION ~

eg 5 >

$\pi = 180^\circ$
CONVERSION
FACTOR *

$\frac{3\pi}{2}$ → DEGREES

$\left(\frac{3\pi}{2}\right)$ (RAD) $\left(\frac{180^\circ}{\pi}\right)$ (DEGREES)

RADIANS: ~ CONVERSION ~

eg 5 >

$\pi = 180^\circ$
CONVERSION
FACTOR *

$\frac{3\pi}{2} \rightarrow$ DEGREES

$$\left(\frac{3\pi}{2} \right) \left(\frac{180^\circ}{\pi} \right) = \frac{3(180^\circ)}{2}$$

(Note: In the original image, red circles labeled 'RAD' and 'DEG' point to the π in the first term and the π in the second term, respectively. Blue lines indicate the cancellation of π between the two terms.)

RADIANS: ~ CONVERSION ~

eg 5 >

$\pi = 180^\circ$
CONVERSION
FACTOR *

$\frac{3\pi}{2}$ → DEGREES

$$\left(\frac{3\pi}{2} \right) \left(\frac{180^\circ}{\pi} \right) = \frac{3(180^\circ)}{2}$$

Handwritten annotations: A red arrow points from a cloud labeled "RAD" to the π in the denominator of the conversion factor. Another red arrow points from a cloud labeled "DEG" to the 180° in the numerator. The final result $\frac{3(180^\circ)}{2}$ is circled in green, with a 90° written above it.

RADIANS: ~ CONVERSION ~

eg 5 >

$\pi = 180^\circ$
CONVERSION
FACTOR *

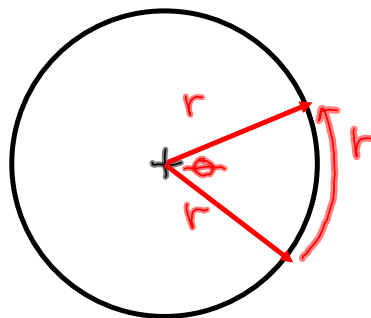
$\frac{3\pi}{2}$ → DEGREES

$$\left(\frac{3\pi}{2} \right) \left(\frac{180^\circ}{\pi} \right) = \frac{3(180^\circ)}{2} = 270^\circ$$

Handwritten annotations: A red arrow points from a cloud labeled "RAD" to the π in the denominator of the conversion factor. Another red arrow points from a cloud labeled "DEG" to the 180° in the numerator. A green circle is drawn around the $\frac{3(180^\circ)}{2}$ part of the equation, with a "90°" written above it. The final result "270°" is enclosed in a box.

RADIANS:

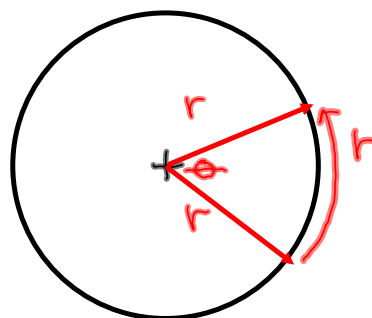
AREA OF SECTOR:



RADIANS:

$$r = 10 \text{ cm}$$

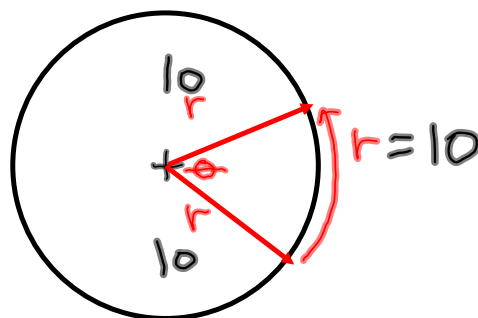
AREA OF SECTOR:



RADIANS:

$$r = 10 \text{ cm}$$

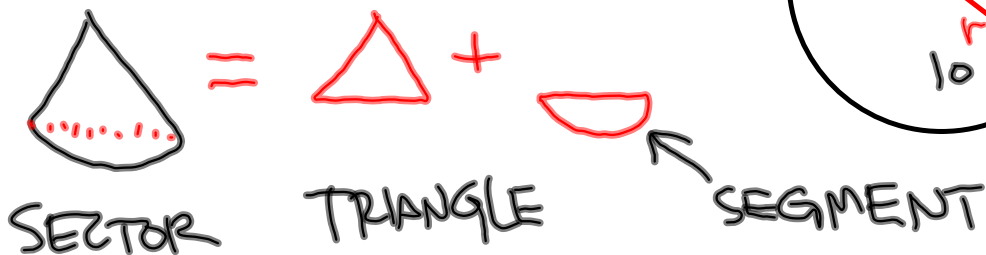
AREA OF SECTOR:



RADIANS:

AREA OF SECTOR:

$r = 10 \text{ cm}$



RADIANS: AREA OF SECTOR:

$r = 10 \text{ cm}$



SECTOR

↓
SIMILAR

=



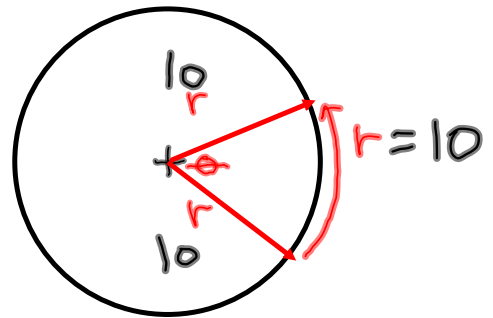
+



TRIANGLE

↓
 $A = \frac{1}{2}(b \times h)$

SEGMENT



RADIANS:

AREA OF SECTOR:

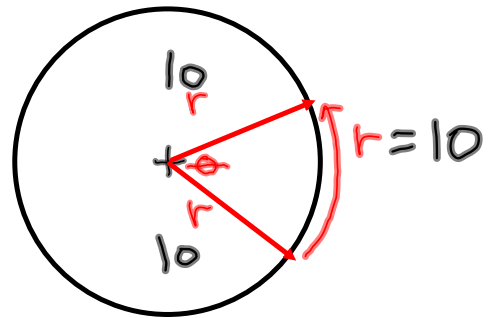
$r = 10 \text{ cm}$



=



+



SECTOR

TRIANGLE

SEGMENT

↓
SIMILAR

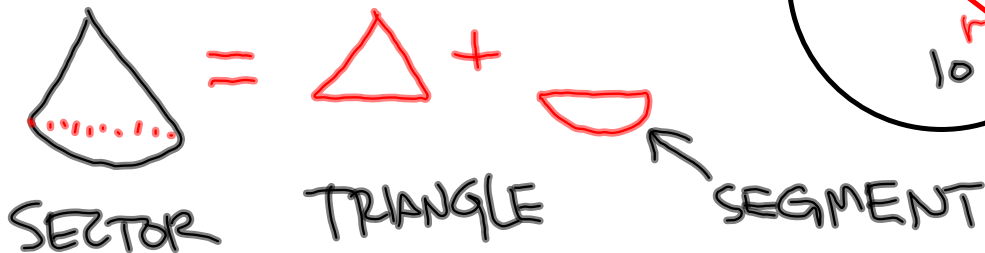
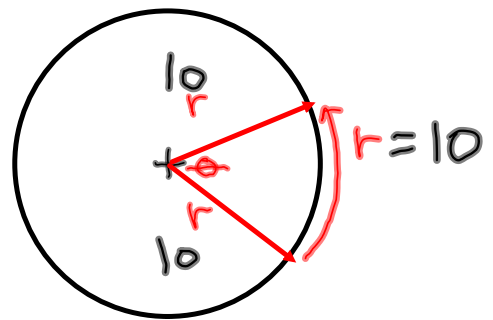
↓
 $A = \frac{1}{2}(b)(h)$

$A = \frac{1}{2}(r)(r)$

↑ Too LONG For $\Delta \therefore$ I NEED AN ADJUSTMENT

RADIANS: AREA OF SECTOR:

$r = 10 \text{ cm}$



SECTOR
↓
SIMILAR

TRIANGLE
↓
 $A = \frac{1}{2}(b)(h)$

$A = \frac{1}{2}(r)(r)\theta$ IN RADIANS!

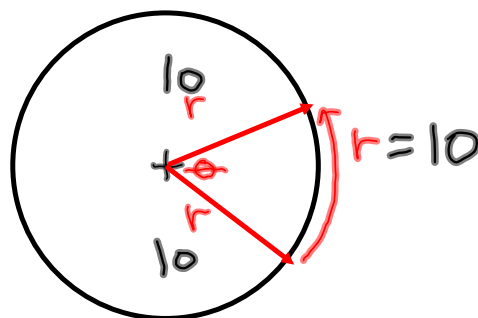
↑ TOO LONG FOR Δ ∴ I NEED AN ADJUSTMENT

RADIANS: AREA OF SECTOR:

$$r = 10 \text{ cm}$$

$$A = \frac{1}{2} r^2 \theta$$

IN RADIANS



RADIANS: AREA OF SECTOR:

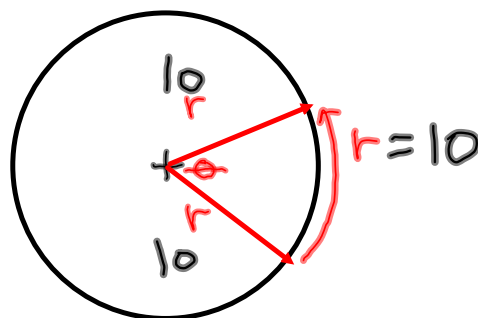
$$r = 10 \text{ cm}$$

$$A = \frac{1}{2} r^2 \theta$$

IN RADIANS

$$= \frac{1}{2} (10)^2 \left(\frac{A.L.}{r} \right)$$

$$=$$



RADIANS: AREA OF SECTOR:

$$r = 10 \text{ cm}$$

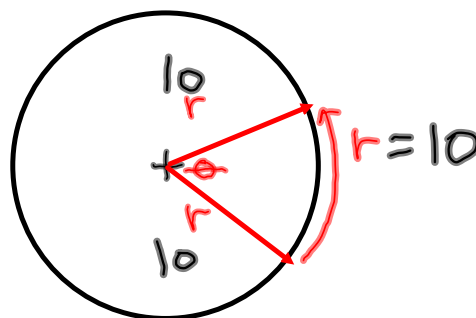
$$A = \frac{1}{2} r^2 \theta$$

IN RADIANS

$$= \frac{1}{2} (10)^2 \left(\frac{A.L.}{r} \right)$$

10/10

$$=$$



RADIANS: AREA OF SECTOR:

$$r = 10 \text{ cm}$$

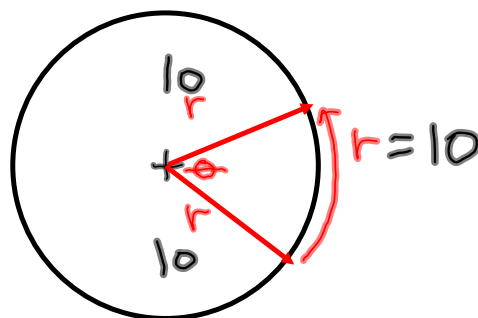
$$A = \frac{1}{2} r^2 \theta$$

IN RADIANS

$$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$$

10
10

$$=$$



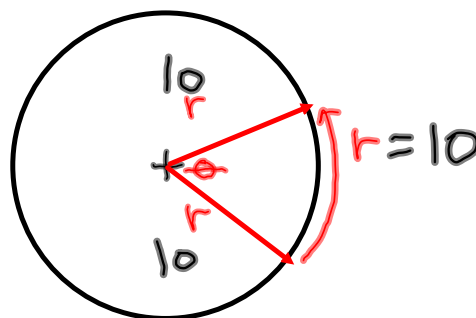
RADIANS: AREA OF SECTOR:

$$r = 10 \text{ cm}$$

$$A = \frac{1}{2} r^2 \theta$$

$$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$$

$$= \frac{1}{2} (100) (1)$$



RADIANS: AREA OF SECTOR:

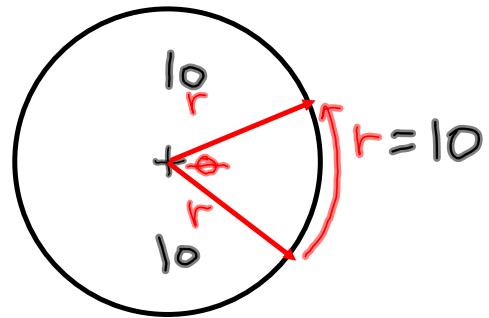
$$r = 10 \text{ cm}$$

$$A = \frac{1}{2} r^2 \theta$$

$$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$$

$$= \frac{1}{2} (100) (1)$$

$$A = 50 \text{ cm}^2$$



RADIANS:

AREA OF SECTOR:

$r = 10 \text{ cm}$

$A = \frac{1}{2} r^2 \theta$

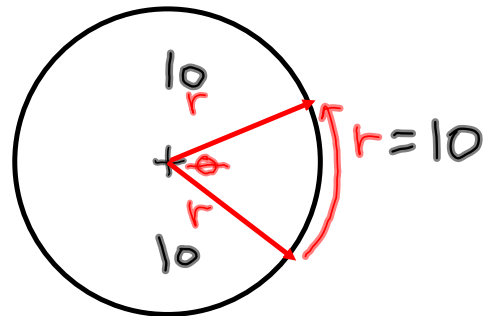
$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$

$= \frac{1}{2} (100) (1)$

$A = 50 \text{ cm}^2$

IN RADIANS

10
10



CHECK:

$\bigcirc = 360^\circ$

$\theta = \text{PART OF } \bigcirc$

RADIANS:

AREA OF SECTOR:

$r = 10 \text{ cm}$

$A = \frac{1}{2} r^2 \theta$

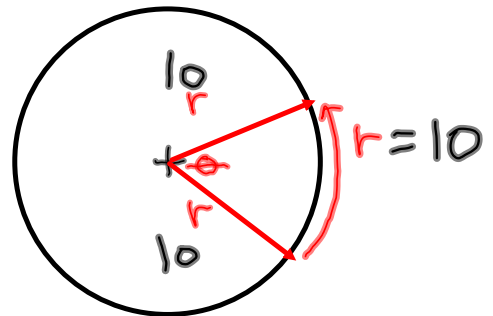
$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$

$= \frac{1}{2} (100) (1)$

$A = 50 \text{ cm}^2$

IN RADIANS

10
10



CHECK:

$\odot = 360^\circ$

$\theta = \text{PART OF } \odot$

$\therefore \frac{\theta}{360} = \text{\% OF } \odot \text{ I HAVE}$

RADIANS: AREA OF SECTOR:

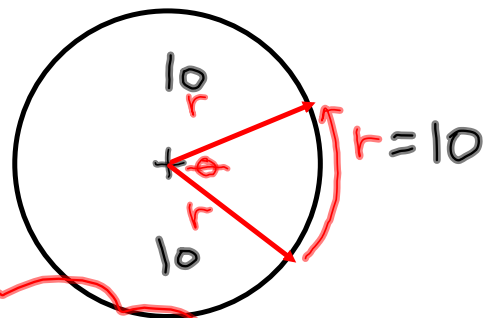
$r = 10 \text{ cm}$

$A = \frac{1}{2} r^2 \theta$
 $= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$
 $= \frac{1}{2} (100) (1)$

$A = 50 \text{ cm}^2$

IN RADIANS

10
10



CHECK:

$\odot = 360^\circ$

$\theta = \text{PART OF } \odot$

$\therefore \frac{\theta}{360} = \text{\% OF } \odot$
 I HAVE

$A_{\odot} \left(\frac{\theta}{360^\circ} \right) = A_{\text{sector}}$

RADIANS: AREA OF SECTOR:

$r = 10 \text{ cm}$

$A = \frac{1}{2} r^2 \theta$

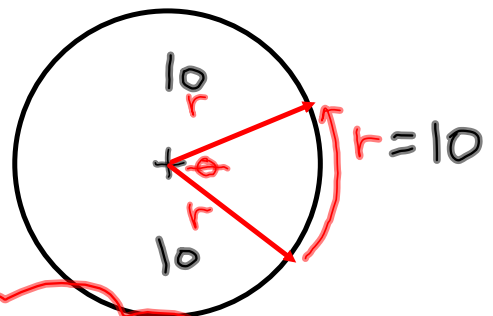
$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$

$= \frac{1}{2} (100) (1)$

$A = 50 \text{ cm}^2$

IN RADIANS

10
10



CHECK:

$A_{\theta} = \pi r^2 = \pi (10)^2$

RADIANS:

AREA OF SECTOR:

$r = 10 \text{ cm}$

$A = \frac{1}{2} r^2 \theta$

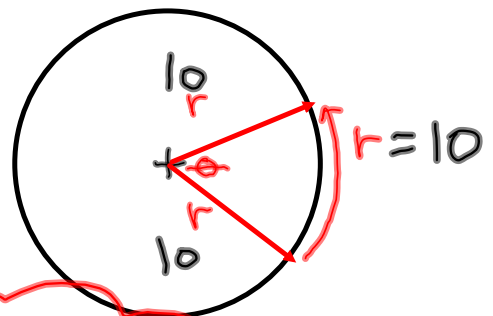
$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$

$= \frac{1}{2} (100) (1)$

$A = 50 \text{ cm}^2$

IN RADIANS

10
10



CHECK:

$A_{\theta} = \pi r^2 = \pi (10)^2$

$\theta = 1 \text{ rad}$

$\left(\frac{1}{1} \right) \left(\frac{180^{\circ}}{\pi} \right) = 57.29^{\circ}$

RADIANS: AREA OF SECTOR:

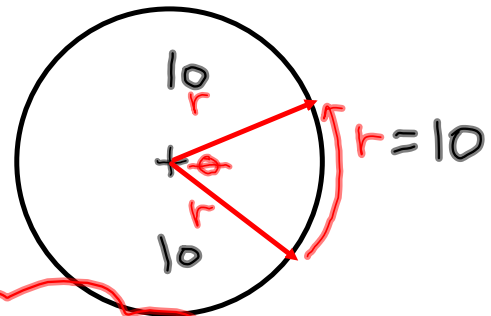
$$r = 10 \text{ cm}$$

$$A = \frac{1}{2} r^2 \theta$$

$$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$$

$$= \frac{1}{2} (100) (1)$$

$$A = 50 \text{ cm}^2$$



CHECK:

$$A_{\theta} = \pi r^2 = \pi (10)^2$$

$$\theta = 57.29^{\circ}$$

RADIANS:

AREA OF SECTOR:

$r = 10 \text{ cm}$

$A = \frac{1}{2} r^2 \theta$

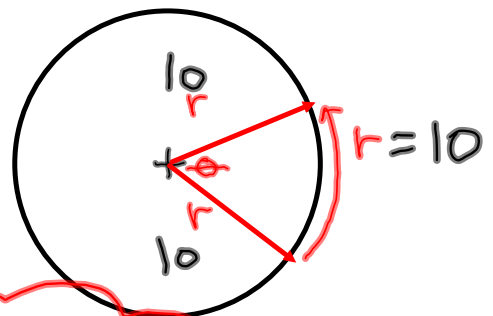
$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$

$= \frac{1}{2} (100) (1)$

$A = 50 \text{ cm}^2$

IN RADIANS

10
10



CHECK:

$A_{\theta} = \pi r^2 = \pi (10)^2$

$\theta = 57.29^{\circ}$

$\% \text{ OF } \odot = \frac{57.29^{\circ}}{360^{\circ}} =$

RADIANS:

AREA OF SECTOR:

$r = 10 \text{ cm}$

$A = \frac{1}{2} r^2 \theta$

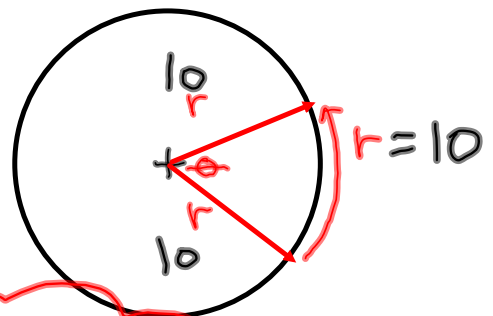
$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$

$= \frac{1}{2} (100) (1)$

$A = 50 \text{ cm}^2$

IN RADIANS

10
10



CHECK:

$A_{\theta} = \pi r^2 = \pi (10)^2$

$\theta = 57.29^{\circ}$

$\% \text{ of } \odot = \frac{57.29^{\circ}}{360^{\circ}} = 0.16$

$(0.16)(100\pi) =$

RADIANS:

AREA OF SECTOR:

$r = 10 \text{ cm}$

$A = \frac{1}{2} r^2 \theta$

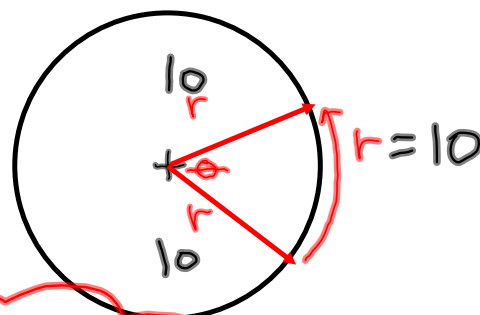
$= \frac{1}{2} (10)^2 \left(\frac{\text{A.L.}}{r} \right)$

$= \frac{1}{2} (100) (1)$

$A = 50 \text{ cm}^2$

IN RADIANS

10
10



CHECK:

$A_{\theta} = \pi r^2 = \pi (10)^2$

$\theta = 57.29^{\circ}$

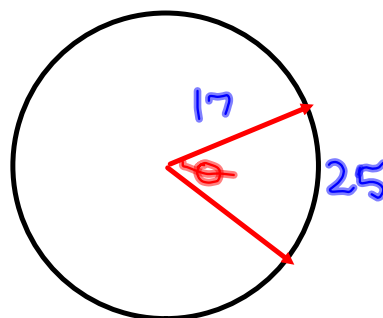
$\% \text{ of } \odot = \frac{57.29^{\circ}}{360^{\circ}} = 0.16$

$(0.16)(100\pi) = 49.995$

PROOF $\rightarrow \approx 50 \text{ cm}^2$

RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

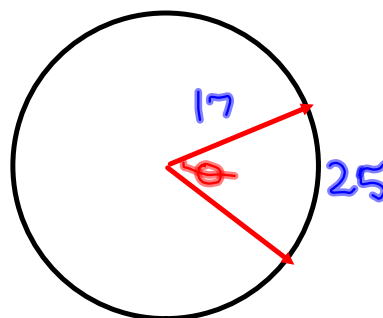


RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

$$A = \frac{1}{2} r^2 \theta$$

RADIANS $\rightarrow \frac{AL}{r}$



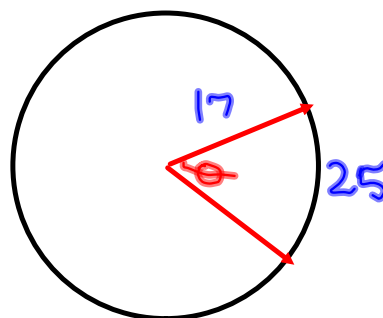
RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

$$A = \frac{1}{2} r^2 \theta$$

RADIANS $\rightarrow \frac{AL}{r}$

$$A = \frac{1}{2}$$



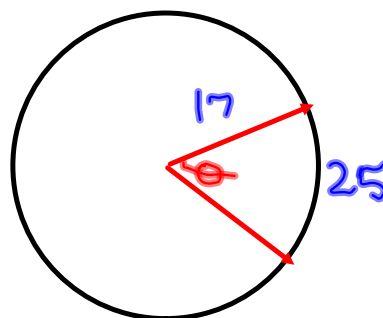
RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

$$A = \frac{1}{2} r^2 \theta$$

(RADIANS) $\rightarrow \frac{AL}{r}$

$$A = \frac{1}{2} (17)^2$$



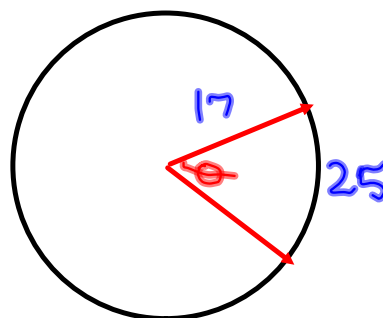
RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

$$A = \frac{1}{2} r^2 \theta$$

(RADIANS) $\rightarrow \frac{AL}{r}$

$$A = \frac{1}{2} (17)^2 \left(\frac{25}{17} \right)$$



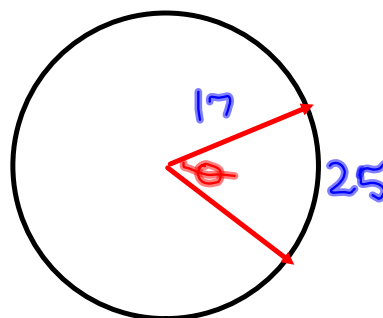
RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

$$A = \frac{1}{2} r^2 \theta$$

(RADIANS) $\rightarrow \frac{AL}{r}$

$$A = \frac{1}{2} (17)^2 \left(\frac{25}{17}\right)$$

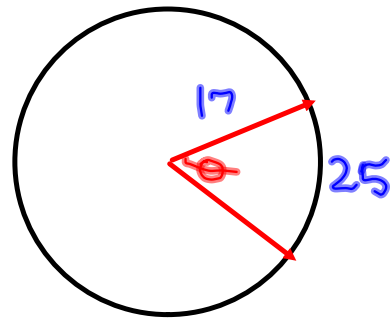


RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

$$A = \frac{1}{2} r^2 \theta$$

RADIANS $\rightarrow \frac{AL}{r}$



$$A = \frac{1}{2} (17)^2 \left(\frac{25}{17}\right)$$

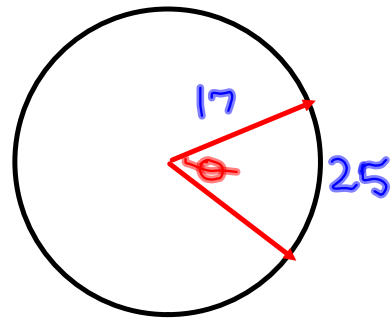
$$A = \left(\frac{1}{2}\right) \left(\frac{17^2}{17}\right) \left(\frac{25}{17}\right)$$

RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

$$A = \frac{1}{2} r^2 \theta$$

RADIANS $\rightarrow \frac{AL}{r}$



$$A = \frac{1}{2} (17)^2 \left(\frac{25}{17}\right)$$

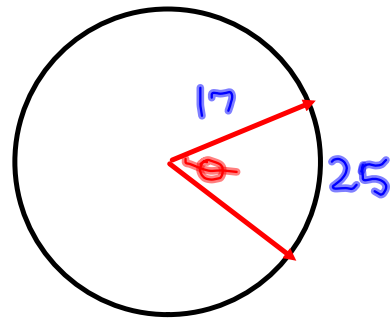
$$A = \left(\frac{1}{2}\right) \left(\frac{17}{17}\right) \left(\frac{25}{17}\right)$$

RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

$$A = \frac{1}{2} r^2 \theta$$

RADIANS $\rightarrow \frac{AL}{r}$



$$A = \frac{1}{2} (17)^2 \left(\frac{25}{17}\right)$$

$$A = \left(\frac{1}{2}\right) \left(\frac{17}{\cancel{17}}\right) \left(\frac{25}{\cancel{17}}\right)$$

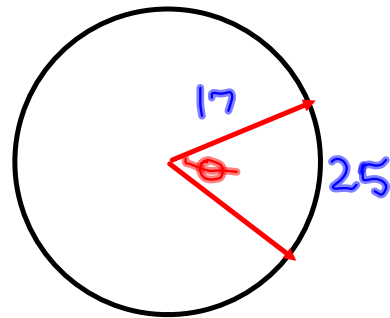
$$A = \frac{(1)(17)(25)}{2}$$

RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

$$A = \frac{1}{2} r^2 \theta$$

RADIANS $\rightarrow \frac{AL}{r}$



$$A = \frac{1}{2} (17)^2 \left(\frac{25}{17}\right)$$

$$A = \left(\frac{1}{2}\right) \left(\frac{17}{17}\right) \left(\frac{25}{17}\right)$$

$$A = \frac{(1)(17)(25)}{2} =$$

RADIANS: AREA OF SECTOR:

eg 6) FIND A_{SECTOR}

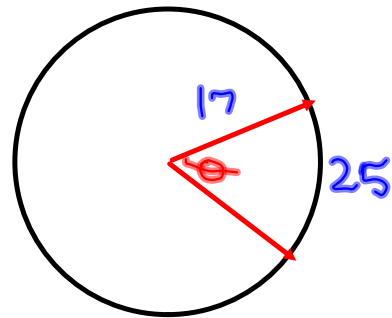
$$A = \frac{1}{2} r^2 \theta$$

RADIANS $\rightarrow \frac{AL}{r}$

$$A = \frac{1}{2} (17)^2 \left(\frac{25}{17}\right)$$

$$A = \left(\frac{1}{2}\right) \left(\frac{17}{17}\right) \left(\frac{25}{17}\right)$$

$$A = \frac{(1)(17)(25)}{2} = 212.5$$



$$\theta = 1.47$$