8-2 I can calculate the arc length and area of a sector

How do I find arc length?

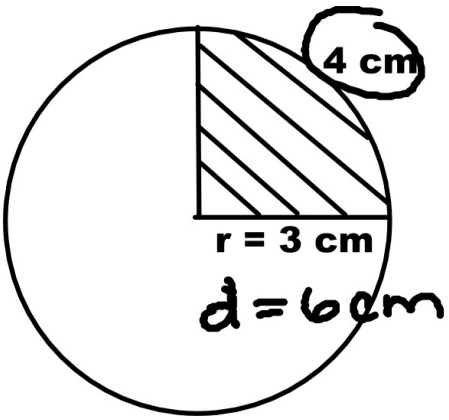
$$\frac{\text{part}}{\text{whole}} = \frac{\text{arc}}{\text{circumference}}$$

(usually a given fraction)

How do I find area of a sector?

$$\frac{\text{Circumference}_{\text{part}}}{\text{Circumference}_{\text{whole}}} = \frac{\text{Area}_{\text{part}}}{\text{Area}_{\text{whole}}}$$

A sector of a circle is shown.



a. Circumference of whole circle:

$C = \pi d$

$18.84 = 3.14(6)$

b. Area of whole circle:

$A = \pi r^2$

$28.26 = 3.14(3)^2$

c. Arc length of sector:

4

d. Area of sector:

$$\frac{x = 6\text{ cm}}{28.26} = \frac{4}{18.84}$$

Betty cuts an 8 inch pie is cut into 6 pieces of equal size. Find the following:

a. Circumference of whole circle:

$25.12 = 3.14(8)$

b. Area of whole circle:

$113.04 = 3.14(6)^2$

$d = 8$

$r = 4$

c. Arc length of sector: $\frac{1}{6}$

$\frac{1}{6} = \frac{x}{25.12}$ $x = 4.186$ in

d. Area of sector: $\frac{1}{6}$

$\frac{1}{6} = \frac{x}{113.04}$ $x = 18.84$ in

A school surveyed 250 students to determine how they got to school. Each person selected form of transportation. The results are shown in the circle graph below. If an equal number of students chose biking and car, how many students biked to school?

$\frac{25}{100} = \frac{x}{250}$ $x = 62.5 \approx 63$