Mid-Chapter Review

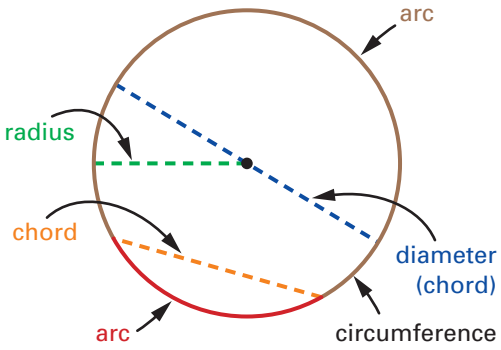
Frequently Asked Questions

Q: What are the parts of a circle?

A: The **circumference** is the boundary of a circle. It is also the length of this boundary.

The **diameter** is a line segment that runs from one side of a circle, through the centre, to the other side. It is also the length of this line segment.

The **radius** is a line segment that goes from the centre of a circle to a point on its circumference. The radius is also the length of this line segment. The radius is half the diameter.



A **chord** is a line segment that joins any two points on the circumference. It is also the length of this line segment.

An **arc** is a section of the circumference that lies between the two ends of a chord. It is also the length of this section. A chord creates two arcs.

Q: How can you use a compass to draw a circle if you know its radius or diameter?

A: If you know the radius, go to step 2.

1. If you know the diameter, divide it by 2 to determine the radius. For example, a circle with a diameter of 14.0 cm has a radius of 7.0 cm.
2. Adjust the compass so that the distance between the compass point and the pencil tip is equal to the radius. Put the compass point where you want the centre of the circle to be. Then draw the circle.

Q: How can you determine the circumference of a circle if you know its diameter?

A1: You can estimate. Since the circumference of a circle is about three times its diameter, you can multiply its diameter by 3. For example, the circumference of a circle with a diameter of 6 cm is about 3×6 cm, or 18 cm.

A2: You can use a formula. The formula for the circumference, C, of a circle with diameter d is $C = \pi d$. Since the diameter is twice the radius, this formula can also be written as $C = 2\pi r$. You can use 3.14 as an approximate value for π. For example, the circumference of a circle with a diameter of 6.0 cm is calculated as follows:

$C = \pi d$

$\doteq 3.14 \times 6.0$ cm

$\doteq 18.8$ cm

Practice Questions

(5.1) **1.** Sketch a circle, and label the parts.

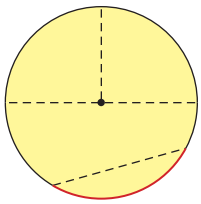
circumference

radius

diameter

chord

arc



(5.1) **2.** Arrange the following measures of a circle in order, from shortest to longest: diameter, circumference, radius. Use drawings and words to explain your thinking.

(5.2) **3.** Diana is drawing a chalk circle on the gym floor for a game. The diameter of the circle is 3.0 m. Estimate the circumference of the circle.

(5.2) **4.** Estimate the circumference of a circle with each diameter.

a) 26 cm **c)** 17.2 cm

b) 10.8 m **d)** 3 km

(5.3) **5.** Copy and complete the chart.

Item	Diameter	Radius	Circumference
CD case		6.0 cm	
coaster	9.0 cm		
lock	26 mm		
coin		1.9 cm	

6. What is the circumference of the circle in each sign? (5.3)

a)

b)

c)

d)

e)

f)

7. Suppose that you double the diameter of a circle. What happens to the circumference of the circle? Draw two circles to explain your answer. (5.3)