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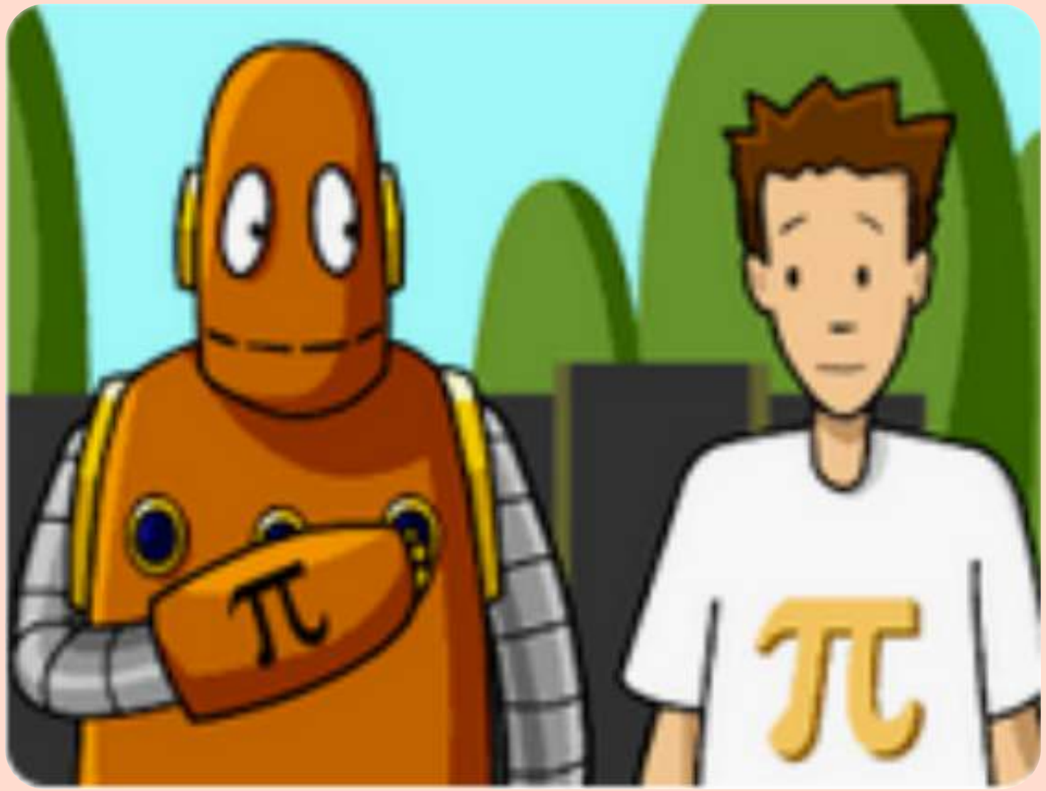
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What is Pi?

a mathematical constant

equal to around 3.14159

the ratio of a circle's *C* to its *d*

an irrational number

not writable as a fraction

For any circle, if you divide the circumference by the diameter, you will get exactly the same number!

$C = 15.7$ cm
$d = 5$ cm
$C/d \approx$ **3.14**

$C = 22$ cm
$d = 7$ cm
$C/d \approx$ **3.14**

$C = 78.5$ cm
$d = 25$ cm
$C/d \approx$ **3.14**

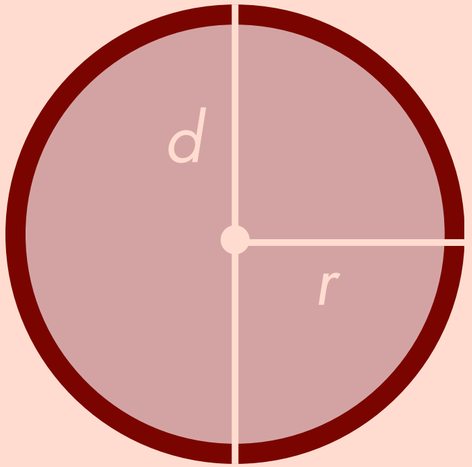
Circle Formulas

circumference = 2(pi)(radius)
= (pi)(diameter)

area = $(\text{pi})(\text{radius})^2$

$$C = 2\pi r$$
$$C = \pi d$$

$$A = \pi r^2$$



Circumference

What is the circumference of a pie with a radius of 11.2 cm?

$$C = 2\pi r$$
$$= 2(\pi)(11.2 \text{ cm})$$
$$\approx 70.37 \text{ cm}$$

70.37 cm

Circumference

What is the circumference of this pie?

$$C = \pi d$$
$$= \pi(28.8 \text{ cm})$$
$$\approx 90.48 \text{ cm}$$

Area

What is the area of a pie with a radius of 14.5 cm?

$$A = \pi r^2$$
$$= \pi(14.5 \text{ cm})^2$$
$$\approx 660.52 \text{ cm}^2$$

Area

What is the area of this pie?

$r = d/2$

$= (19.2 \text{ cm})/2$

$= 9.6 \text{ cm}$

$A = \pi r^2$

$= \pi(9.6 \text{ cm})^2$

$\approx 289.53 \text{ cm}^2$

Practice

1) Find the circumference and area of a pie with a radius of 4 cm.

2) Find the circumference and area of a pie with a radius of 0.2 m.

Practice

1) Find the circumference and area of a pie with a radius of 4 cm.

$C = 2\pi r$
$= 2\pi(4 \text{ cm})$
$\approx 25.13 \text{ cm}$

$A = \pi r^2$
$= \pi(4 \text{ cm})^2$
$\approx 50.27 \text{ cm}^2$

2) Find the circumference and area of a pie with a radius of 0.2 m.

$C = 2\pi r$
$= 2\pi(0.2 \text{ m})$
$\approx 1.26 \text{ m}$

$A = \pi r^2$
$= \pi(0.2 \text{ m})^2$
$\approx 0.13 \text{ m}^2$

Practice

3) Find the circumference and area of this pie:

Practice

3) Find the circumference and area of this pie:

First, calculate the radius:

$$r = d/2$$
$$= (2/3 \text{ m})/2$$
$$\approx 0.33 \text{ m}$$

Then, calculate the circumference and area:

$$C = \pi d$$
$$= \pi(2/3 \text{ m})$$
$$\approx 2.09 \text{ m}$$

$$A = \pi r^2$$
$$= \pi(0.33 \text{ m})^2$$
$$\approx 0.34 \text{ m}^2$$

Make sure you use brackets when inputting into your calculator!

Practice

4) What is the radius of a pie with a circumference of 20 cm?

Practice

4) What is the radius of a pie with a circumference of 20 cm?

$$C = 2\pi r$$
$$20 \text{ cm} = 2\pi r$$
$$20 \text{ cm} / 2\pi = 2\pi r / 2\pi$$
$$3.18 \text{ cm} \approx r$$

$$C = 2\pi r$$
$$C/2\pi = r$$

Practice

5) What is the diameter of a pie with an area of 40 cm^2 ?

Practice

5) What is the diameter of a pie with an area of 40 cm^2 ?

$$A = \pi r^2$$
$$40\ cm^2 = \pi r^2$$
$$40\ cm^2 / \pi = r^2$$
$$\sqrt{12.73\ cm^2} = \sqrt{r^2}$$
$$3.57\ cm \approx r$$

$$A = \pi r^2$$

$$\sqrt{A/\pi} = r$$

Worksheet

Complete the maze by following the path created by correctly solving various circle area and circumference questions!

Once you finish the sheet, see Ms. Qiu to check if you've escaped.