Date: _____

Circle: pi and Finding Circumference

1. WHAT IS pi (π)?

- π (pronounced as "pie") is a letter of the Greek alphabet;
- in Math, this symbol is used to represent the ratio of circumference and diameter, the special relationship between circumference and diameter;
- in any circle, this ratio, this relationship is always the same:

$$\pi = 3.141\ 592\ 653\ 589\ 793\ldots$$

- this number is a non-repeating, and non-terminating decimal;
- it has been a great quest in history to find the most accurate measure of π

2. DIAMETER & RADIUS

Remember that the definition of **radius** is _____.

Therefore, if the radius of a circle is **4 cm**, then the diameter must be _____.

Complete the table:

CIRCLE	A	B	C	D	E	F	G	H	I
RADIUS	11m	21cm	1.1cm			1.3m	2.9cm		
DIAMETER				8m	11cm			5.3m	9cm

Remember: **diameter = 2 x radius** $\quad d = 2r$ / **radius = diameter ÷ 2** $\quad r = \frac{d}{2}$

3. FINDING CIRCUMFERENCE

Remember that every circumference, when divided by its diameter will always equal __

That means that a diameter of a circle multiplied by π will always give you the circle's _____.

Knowing this, we can come up with these formulae.

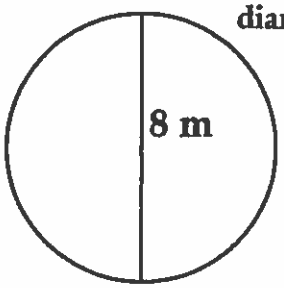
To find the circumference of a circle we use:

$C = \pi d$	when we are given the **diameter** of the circle;
or $C = \pi 2r$ (usually written $C = 2\pi r$)	when we are given the **radius** of the circle

To simplify calculation, we use $\pi \doteq 3.14$

4. Example: Find the Circumference of these circles:

a) diameter = 8 m



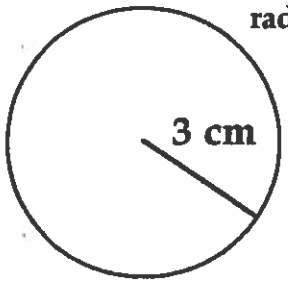
Since the **diameter** is given, we use this formula:

$C = \pi d$

$= 3.14 \times 8\ m$

$= 25.12\ m$

b) radius = 3 cm



Since the **radius** is given, we use this formula:

$C = 2\pi r$

$= 2 \times 3.14 \times 3\ cm$

$= 6..28 \times 3\ cm$

$= 18.84\ cm$

Formula is always written first

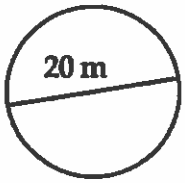
All work is shown in steps

Final answer rounded to two decimal places with proper unit included

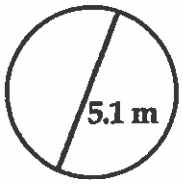
5. Calculate the following Circumferences.

a)

b)



c)



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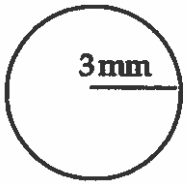

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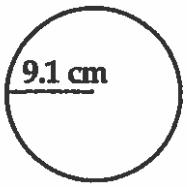

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