Area of Circles Study Guide

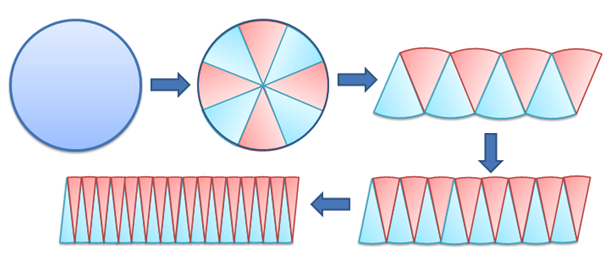
Remember: Circumference =

Area of a rectangle = AT = *bh*

Area of a parallelogram = AP = *bh*

Where does the formula for the area of a circle come from?

Cut the circle into wedges and arrange them into a parallelogram:



The smaller the wedges, the closer the circles gets to a parallelogram.

To find the area of a parallelogram we need the base and the height: AP = *bh*

The height is the radius of the circle.

The base is half of the circumference of the circle:

We don’t want two variables in our formula so lets change C to 2π*r:*

so lets simplify:

Now lets plug that information into the area formula for the parallelogram:

AP = *bh =*

Now lets use it! If the radius of a circle is 3 cm, what is the area?

A = \*Don’t forget to round properly and write the units!

What if they don’t give you the radius, but they give you the diameter?

Ex: What is the area of a circle if the diameter is 7 in?

Cut the diameter in half to get the radius!

Now lets use the formulas to work backwards:

If the area of a circle is 490.63 , what is the radius?

\*Put in the formula for area, so you can simplify

\*Divide **both** sides by

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\*Now undo squaring with square root

√ √

\*Don’t forget to round properly and write the units!

If the circumference of the circle is 150.7 in, what is the radius?

\*Put in the formula for circumference, so you can simplify

\*Divide both sides by to get r by itself, remember to use parenthesis in your calculator so it does the correct order of operations