
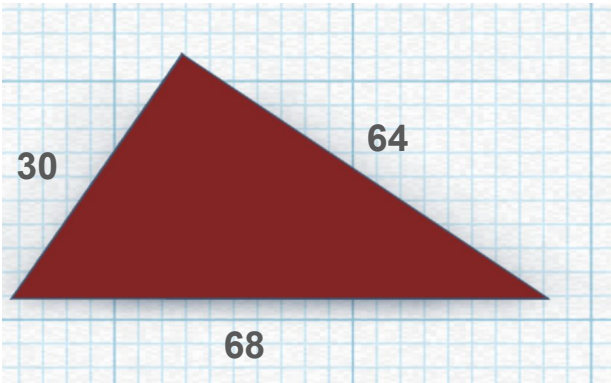



## Find the perimeter of these basic shapes:

 <p>12 ft</p> <p>7 ft</p> <p>7 ft</p> <p>12 ft</p>	<p>Add the sides to get the perimeter and write the answer here:</p> <p>_____</p> <p><b>P=</b> _____</p>
 <p>30</p> <p>64</p> <p>68</p>	<p>Add the sides to get the perimeter and write the answer here:</p> <p>_____</p> <p><b>P=</b> _____</p>
 <p>d=116 in</p>	<p>Multiply the diameter (d) x Pi (<math>\pi=3.14</math>) to get the circumference (perimeter) and write the answer here:</p> <p><b>C= <math>\pi</math> x</b> _____</p> <p><b>C<math>\approx</math></b> _____</p>

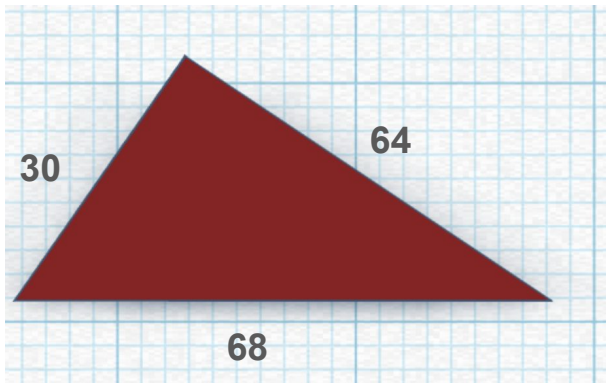
## Use a formula to find the perimeter of these basic shapes:



Use a formula to get the perimeter and write the answer here:

$$P = 2l + 2w$$

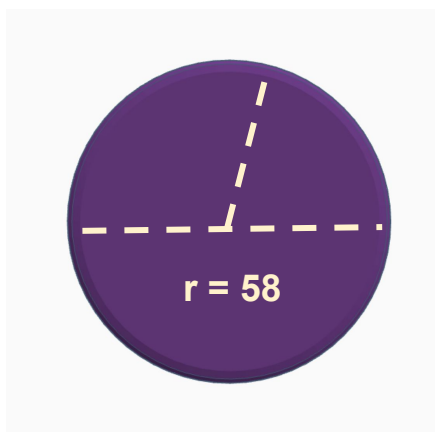
$$P = \underline{\hspace{2cm}}$$



Add the sides to get the perimeter of the scalene triangle and write the answer here:

$$P = a + b + c$$

$$P = \underline{\hspace{2cm}}$$

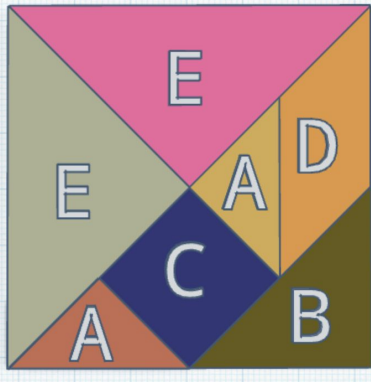


Multiply 2 times the radius ( $d$ ) x Pi ( $\pi=3.14$ ) to get the circumference (perimeter) and write the answer here:


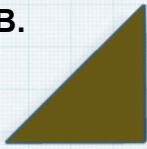


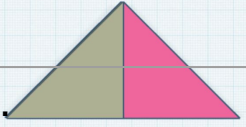
$$C = 2\pi r \underline{\hspace{2cm}}$$

$$C \approx \underline{\hspace{2cm}}$$

## Strategy 3 (Advanced-Tangrams)



The math relations between the 5 basic shapes of the Tangram puzzle shown below will allow you to create and/or solve new interesting geometric puzzles. The small isosceles triangle **B**, the square **C** and the rhomboid **D** of the Tangram all have the same area, but their surfaces are different. Actually, the square **C** has the smallest perimeter ( $4a < 2(a+b)$ ). The large isosceles triangle **E** is 4 times the size of the small isosceles triangle **A**, but curiously its perimeter is only 2 times as big!

<b>A.</b>  $a < b$ $a = b/\sqrt{2}$ $b = a\sqrt{2}$  <b>Perimeter:</b> $2a + b$ with "a": $a(2 + \sqrt{2})$ with "b": $b(1 + \sqrt{2})$  <b>Area:</b> $a^2/2$ or $b^2/4$	<b>B.</b>   $2(a + b)$ $2a(1 + \sqrt{2})$ $b(2 + \sqrt{2})$	<b>C.</b>   $4a$ $2b\sqrt{2}$  $a^2$ or $b^2/2$	<b>D.</b>   $2(a + b)$ $2a(1 + \sqrt{2})$ $b(2 + \sqrt{2})$	<b>E.</b>   $2(2a + b)$ $2a(2 + \sqrt{2})$ $2b(1 + \sqrt{2})$  $2a^2$ or $b^2$
<b>Global puzzle perimeter:</b> $8b$		<b>Global puzzle area:</b> $8a^2$ or $4b^2$		

The geometrical shapes in fig. a) and b) seem to be identical... It's obvious that they are made with the same 4 Tangram pieces, but thanks to the table above, we can calculate the perimeter of each geometric figure and find that the perimeter of second diagram is approx. 1.03 times larger than the first one. The math expression is:

$$P_b / P_a = 2(4a+b)/2(a+3b)$$

By substituting the value "b" with "a2", we obtain: **1.0327...**

