1.7 Introduction to Perimeter, Circumference, and Area

**SQUARE**
- Perimeter: $P = 4s$
- Area: $A = s^2$

**RECTANGLE**
- Perimeter: $P = 2l + 2w$
- Area: $A = lw$

**TRIANGLE**
- Perimeter: $P = a + b + c$
- Area: $A = \frac{1}{2}bh$

**CIRCLE**
- Circumference: $C = 2\pi r$
- Area: $A = \pi r^2$

Perimeter measurements use units such as centimeters, meters, inches, feet, yards, etc.

The measurements of area use units such as square centimeters (cm$^2$), square meters (m$^2$), etc.

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**Example 1**

Find the perimeter & area of the rectangle.

- Perimeter: $P = 2l + 2w$
- $P = 2(6) + 2(4) = 20$ units

- Area: $A = lw$
- $A = 6 \cdot 4 = 24$ units$^2$
**Example 2**
Find the perimeter & area of the square.

\[ P = 4s \]
\[ P = 4(1.5) \]
\[ P = 6 \text{ ft} \]

\[ A = s^2 \]
\[ A = (1.5)^2 \]
\[ A = 2.25 \text{ ft}^2 \]

**Example 3**
Find the perimeter & area of the circle.

\[ C = 2 \pi r \]
\[ C \approx 2(3.14)(9) \]
\[ C \approx (3.14)(18) \]
\[ C \approx 56.52 \text{ ft} \]

\[ \frac{3}{14} \times \frac{3}{8} = \frac{9}{56} \]
\[ + \frac{314}{56.52} \]

\[ \pi \approx 3.14 \text{ or } \frac{22}{7} \]

\[ A = \pi r^2 \]
\[ A \approx (3.14)(9)^2 \]
\[ A \approx (3.14)(81) \]
\[ A \approx 254.34 \text{ ft}^2 \]
Example 4
Find the perimeter & area of the triangle.

\[ A = \frac{bh}{2} \]

\[ A = \frac{7 \cdot 4}{2} \]

\[ A = \frac{28}{2} \]

\[ A \approx 14 \text{ units}^2 \]