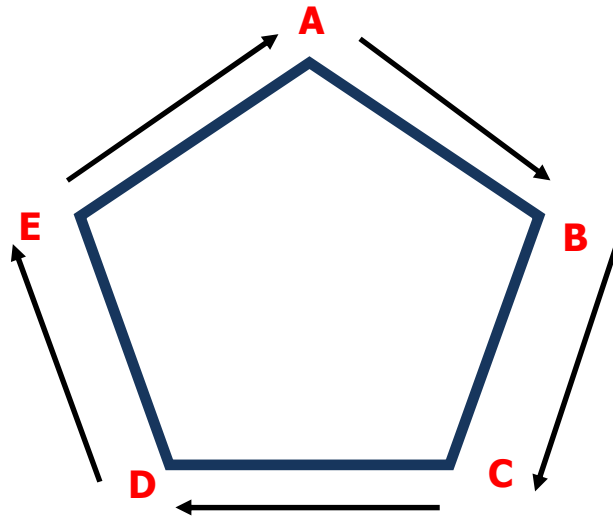


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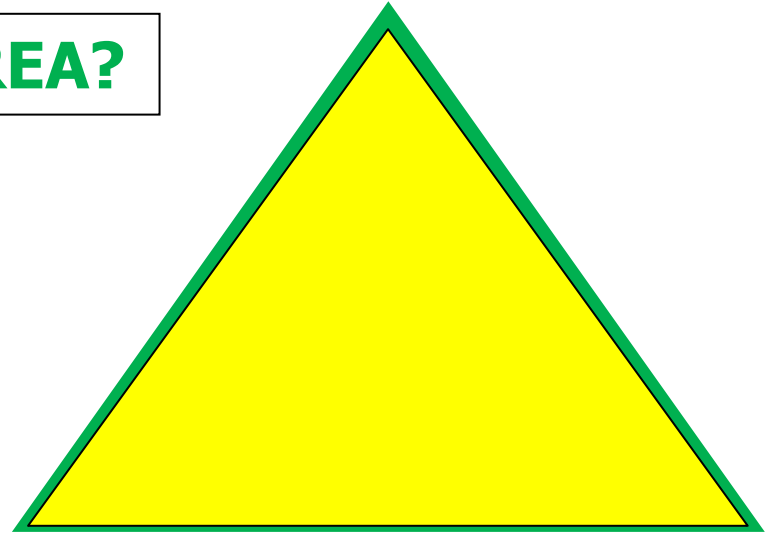


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1

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AREA?



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2

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AREA?

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3

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AREA?

h



b

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DEFINITION

Area

- The measurement of the **interior** of a closed plane figure.

DEFINITION

Perimeter

- The distance **around** a closed plane figure.
- Calculated by adding all the side lengths together.

FORMULA

Area of a Rectangle

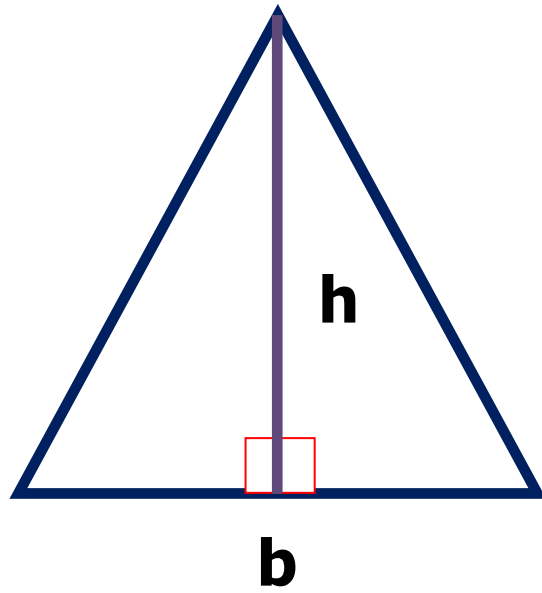
$$A = bh$$

POSTULATE

Sum of All Areas

- Finding the area of multiple figure shape by dividing it into smaller polygons.

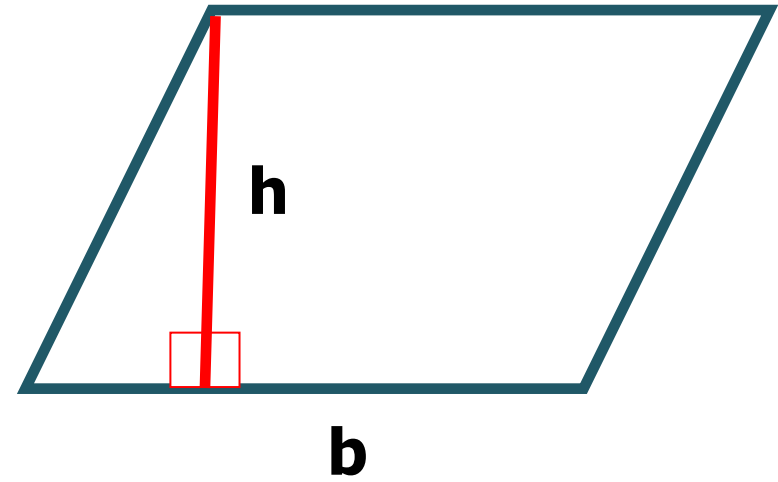
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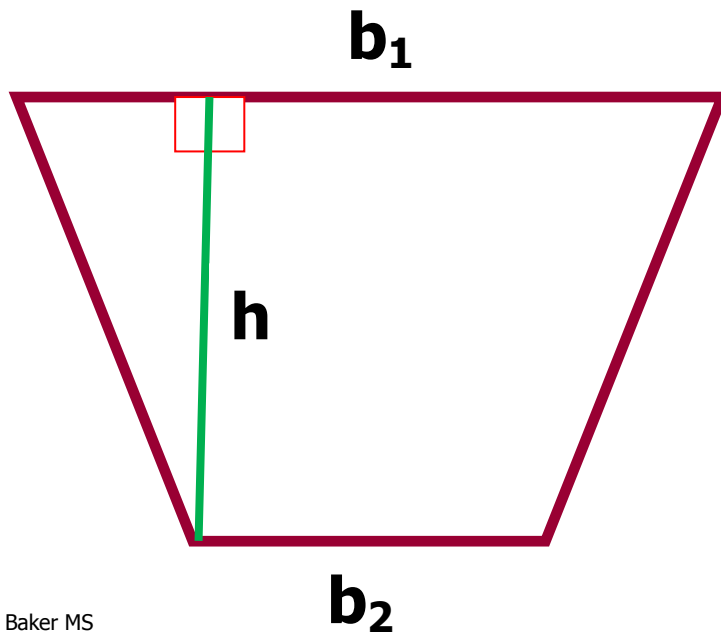
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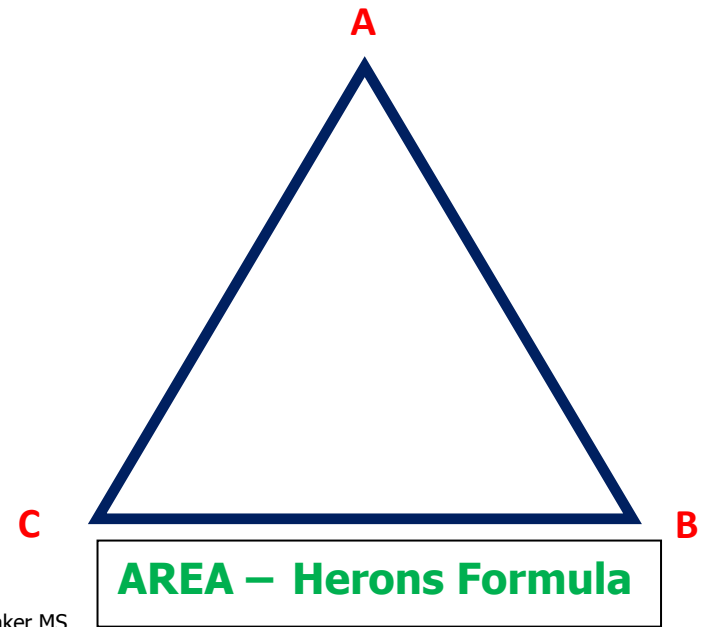
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FORMULA

Area of a Parallelogram

$$A = bh$$

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FORMULA

Area of a Triangle

$$A = \frac{1}{2} bh$$

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PROPERTIES

Area – Using Semiperimeter

$$A = \sqrt{s(s-a)(s-b)(s-c)}$$

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FORMULA

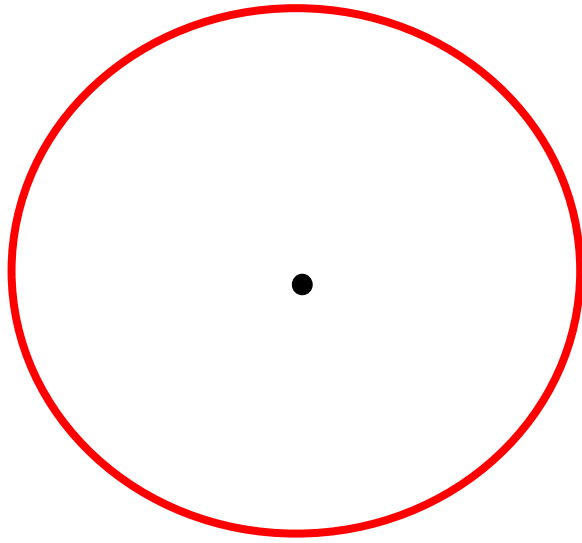
Area of a Trapezoid

$$A = \frac{1}{2} (b_1 + b_2)h$$

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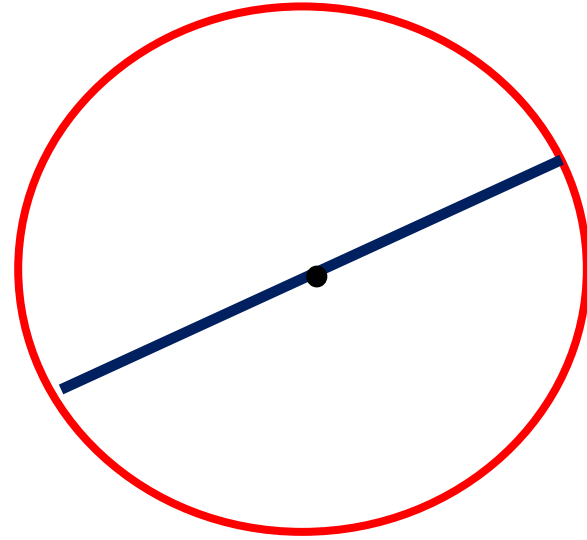
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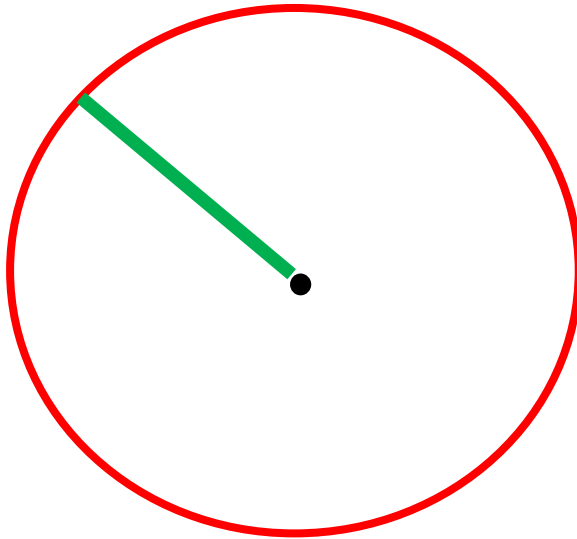
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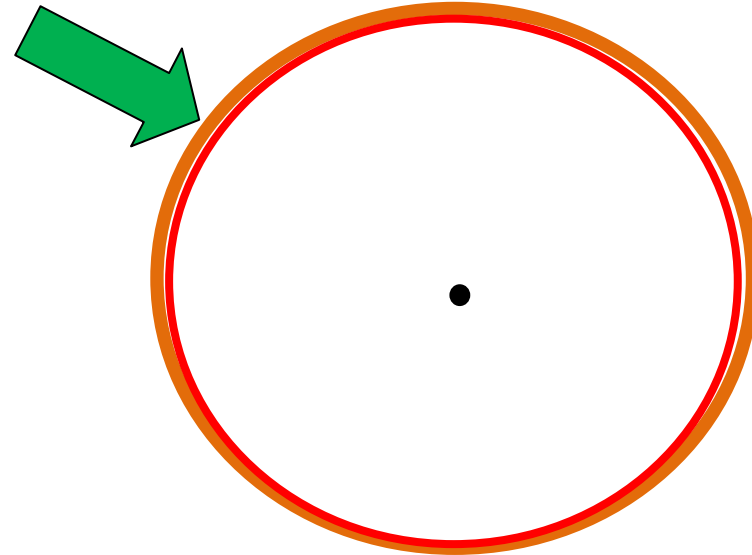
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12

DEFINITION

Diameter

- The distance from one point of the circle to another point on the circle *passing through the center*.

10

DEFINITION

Circle

- Set of points in a plane equidistant from a given point (*the center*) that lies in the same plane.

9

FORMULA

Circumference

- The distance around the circle
- $C = \pi d$ (circumference = pi x diameter)
- $C = 2\pi r$ (circumference = 2 x pi x radius)

12

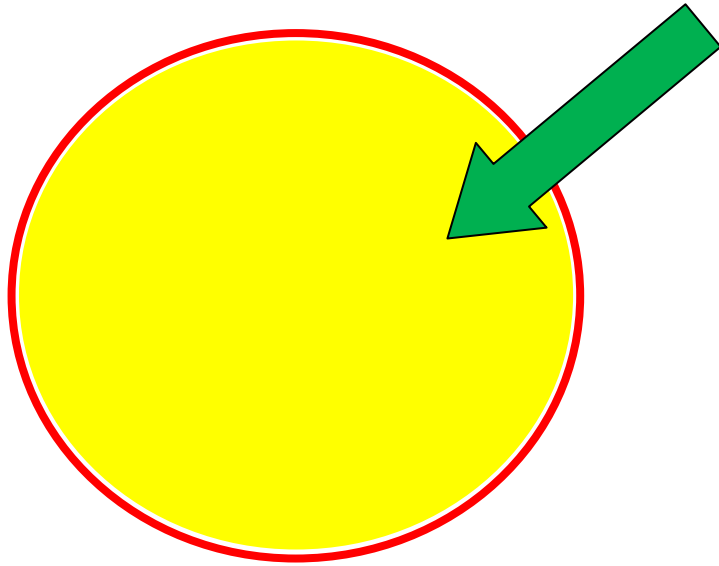
DEFINITION

Radius

- The distance *from the center* to a point on the circle.

11

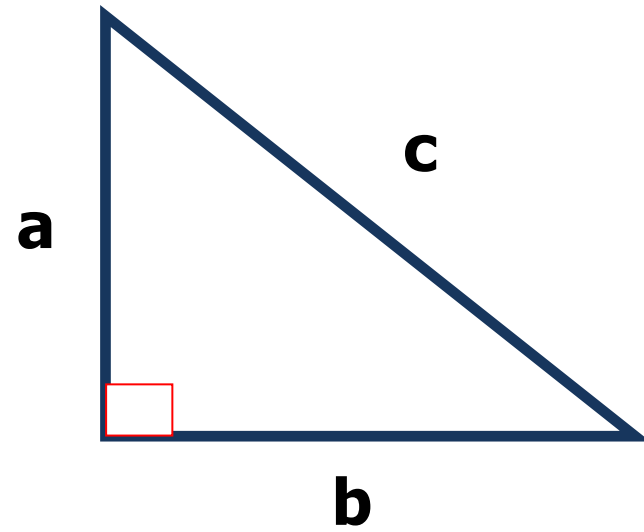
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13

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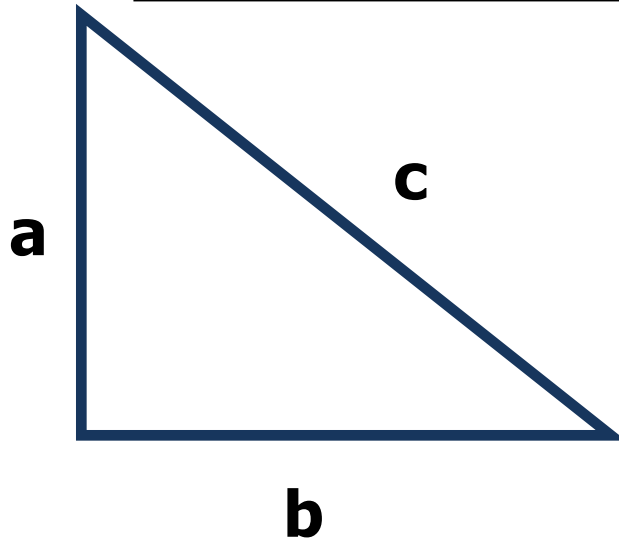


14

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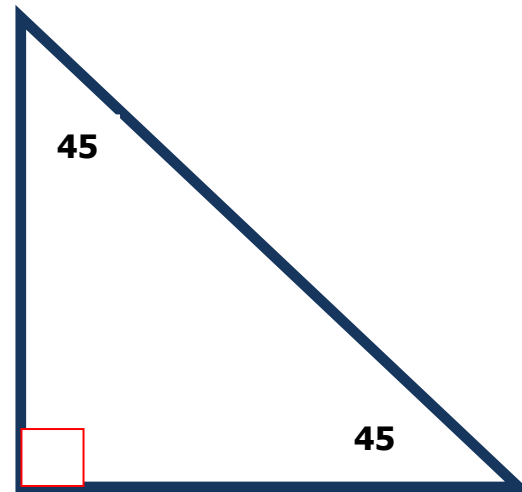
Pythagorean Inequalities



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Pythagorean Theorem

- The sum of the square of the length of the legs of a right triangle are equal to the square of the length of the hypotenuse.

- $a^2 + b^2 = c^2$

Area of a Circle

- $A = \pi r^2$ (area = pi x radius squared)

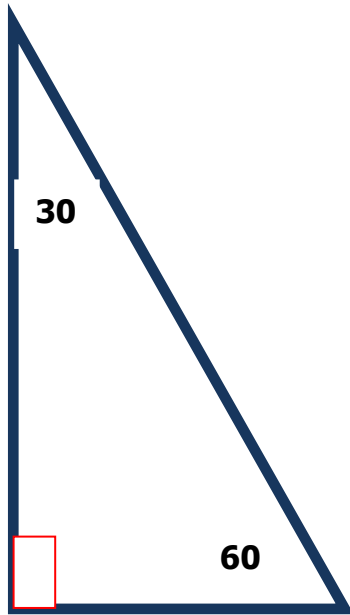
45-45-90 Triangle

- The length of the hypotenuse is $\sqrt{2}$ times the length of the leg.

Pythagorean Inequalities

- If $c^2 = a^2 + b^2$ then ΔABC is a right triangle.
- If $c^2 > a^2 + b^2$ then ΔABC is an obtuse triangle.
- If $c^2 < a^2 + b^2$ then ΔABC is an acute triangle.

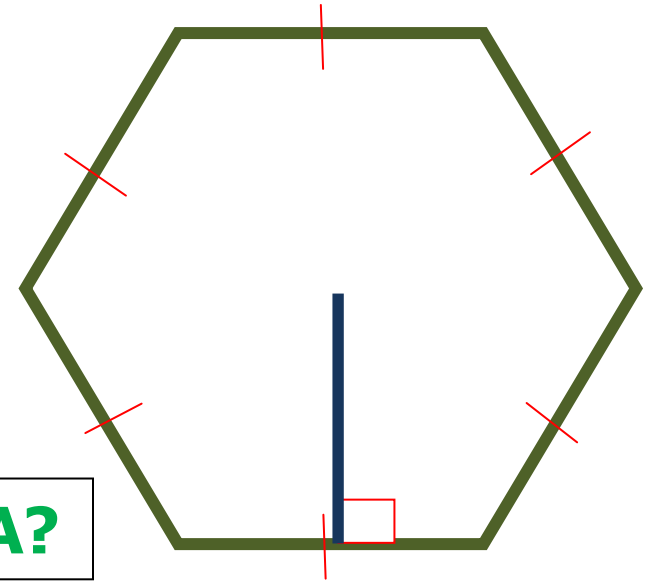
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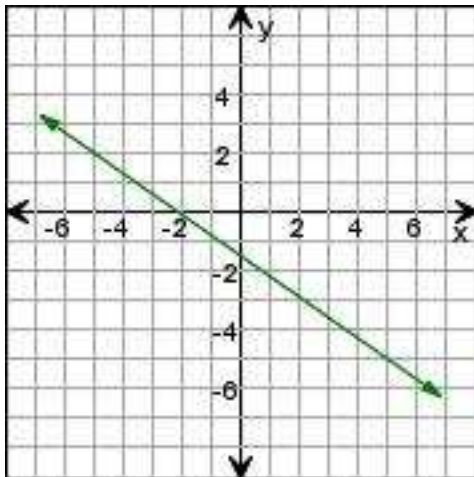


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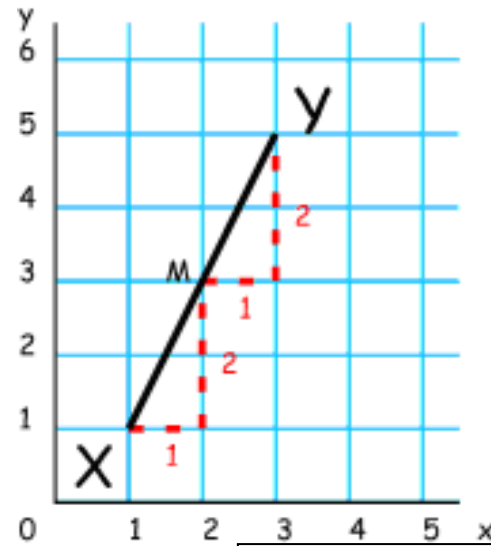


Slope?

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Midpoint?

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Area of a Regular Polygon

$$A = \frac{1}{2} ap$$

- a is the **apothem**
- p is the **perimeter**

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30-60-90 Triangle

- The length of the side across from the 60° angle is $\sqrt{3}$ times the side across from the 30° angle.
- The length of the hypotenuse is 2 times the length of the side across from the 30° angle.

17

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Midpoint

$$\left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right)$$

20

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Parallel Lines

- Two lines are parallel if and only if they have the same slope.

Perpendicular Lines

- Two lines are perpendicular if and only if they have slopes that are negative reciprocals.

Slope

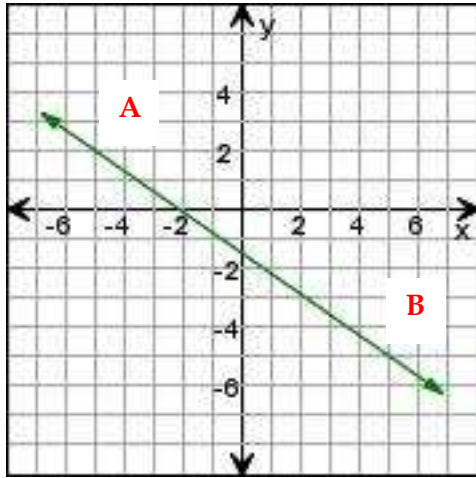
$$\frac{y_2 - y_1}{x_2 - x_1}$$

$$x_2 - x_1$$

19

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Distance?

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22

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23

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24

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22

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FORMULA

$$\text{distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

21

23