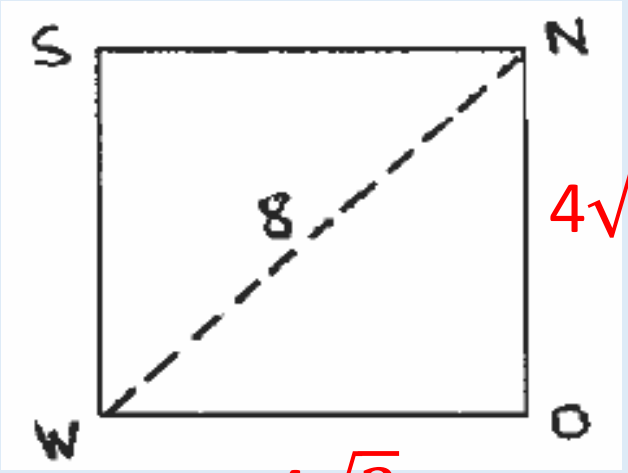
Area Formulas Graphic Organizer

IC1

Shape: Square

Area Formula: A = bh

Diagram/Example:



$4\sqrt{2}$

$4\sqrt{2}$

$8 = x\sqrt{2}$

$8 \cdot \sqrt{2} = x\sqrt{2} \cdot \sqrt{2}$

$8\sqrt{2} = 2x$

$x = 4\sqrt{2}$

A = bh

$A = 4\sqrt{2} * 4\sqrt{2} = 16 * 2 = 32\ u^2$

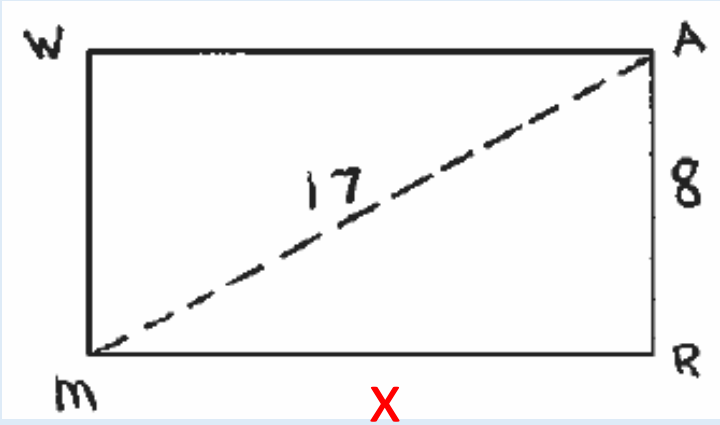
Notes:

- All sides are ≅
- Parallelogram, rectangle, rhombus formulas work too.

Shape: Rectangle

Area Formula: A = bh

Diagram/Example:



$$8^2 + x^2 = 17^2$$
$$64 + x^2 = 289$$
$$x^2 = 225$$
$$x = 15$$

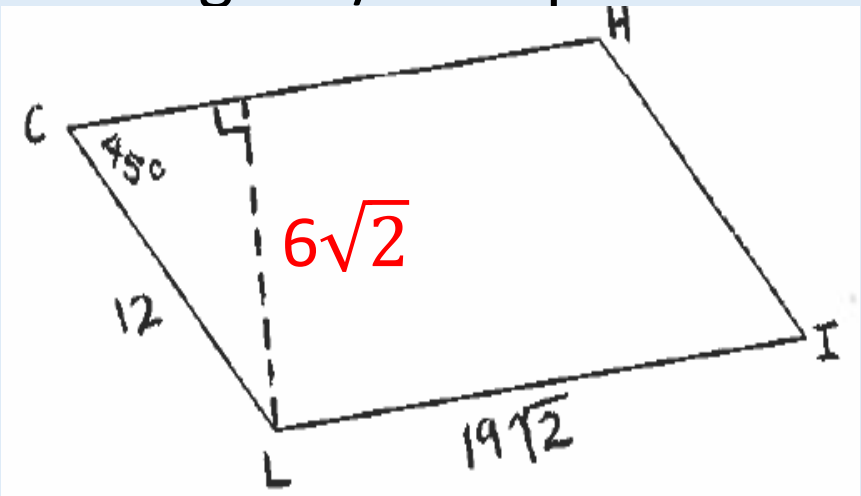
A = bh

A = 15 * 8 = 120 u^2

Shape: Parallelogram

Area Formula: $A = bh$

Diagram/Example:



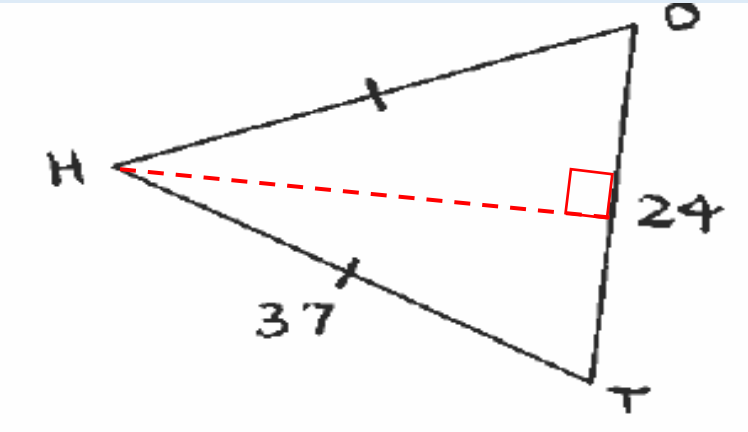
$$12 = x\sqrt{2}$$
$$12 \cdot \sqrt{2} = x\sqrt{2} \cdot \sqrt{2}$$
$$12\sqrt{2} = 2x$$
$$x = 6\sqrt{2}$$

$$A = bh$$
$$A = 6\sqrt{2} * 19\sqrt{2} = 114 * 2 = 228\ u^2$$

Shape: Triangle

Area Formula: $A = \frac{1}{2}bh$ $\quad A = \frac{1}{2}ab\sin C$

Diagram/Example:



$37^2 = 12^2 + h^2$

$h = 35$

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

$A = \frac{1}{2}(24)(35)$

$= 420\ u^2$

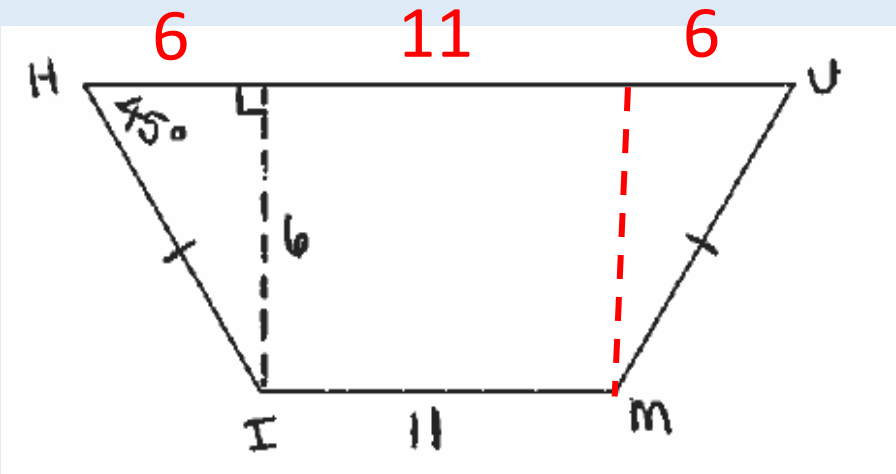
Notes:

- Base and height must be ⊥
- Special Δs, Pythagorean thm., trig., etc. can help to find missing heights or bases.

Shape: Trapezoid

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

Diagram/Example:



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

$$A = \frac{1}{2}(6)(11+23)$$

$$A = 102\ u^2$$

Notes:

- Isoscelese trapezoids have 2 ≅ legs.

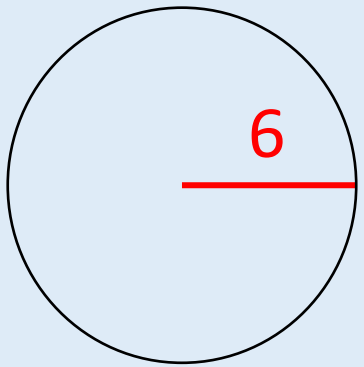
Shape: Circle

Area Formula: $A = \pi r^2$

Circumference: $C = 2\pi r = \pi d$

(dist around the circle):

Diagram/Example:



$$A = \pi \cdot 6^2$$
$$A = 36\pi\ un^2\ (Exact\ Answer)$$
$$A \approx 113.1\ un^2\ (1\ dec)$$

$$C = 2\pi(6)$$
$$C = 12\pi\ un\ (Exact\ Answer)$$
$$C \approx 37.7\ un\ (1\ dec)$$

Notes:

- 2 radii = diameter
- If answer is to be exact, don't actually multiply by π