

## WORKED EXAMPLES PACK

# Triangles and Angles Worked Examples Pack

A more useful worked-examples pack for triangle methods, hypotenuse calculations, and degree-radian relationships.

**QUICK OVERVIEW**

**Category: geometry trigonometry**

Includes 2 related guide pages.

Links back to 5 calculator tools.

**FORMULA HIGHLIGHTS**

Triangle area

$$A = 1/2 \times \text{base} \times \text{height}$$

Degrees to radians

$$\text{radians} = \text{degrees} \times \pi / 180$$

**TRIANGLE EXAMPLE SET**

Right triangle with legs 6 and 8 -> hypotenuse 10.

Triangle with base 12 and height 5 -> area 30 square units.

Triangle with sides 13, 14, 15 -> area 84 square units using Heron's formula.

**ANGLE CONVERSION EXAMPLES**

45 degrees =  $\pi/4$  radians.

120 degrees =  $2\pi/3$  radians.

1 radian is about 57.3 degrees.

**METHOD-CHOICE REMINDERS**

- Use Pythagoras only for right triangles.
- Use base-height area when a perpendicular height is known.
- Use Heron's formula when all three side lengths are known.

**COMMON MISTAKES**

- Misidentifying the hypotenuse.
- Using a non-perpendicular side as height.
- Switching calculator angle modes without noticing.