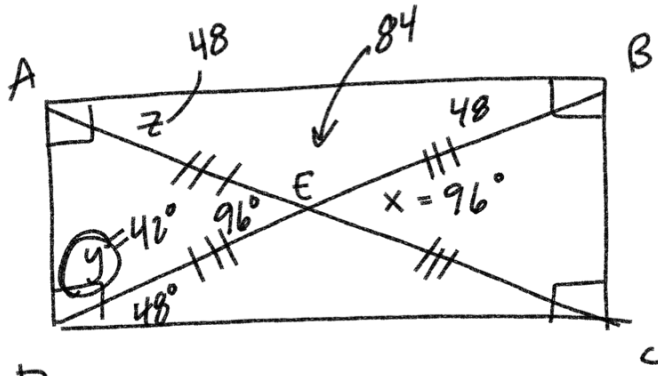
S-G Geometry Session 20 8/8



$z = 48°$ isosceles triangle diagonals are congruent

$48 + 48 + E = 180°$

$96 + E = 180$

$-96 \quad -96$

$E = 84$

Linear Pairs

$84 + x = 180$

$-84 \quad -84$

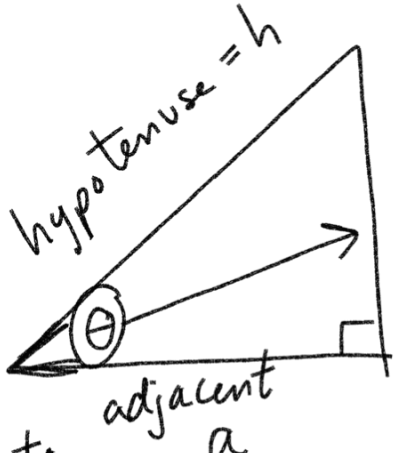
$x = 96$

$90 - 48 = y$

$42 = y$

Trigonometric Ratios (Right Triangles)

↳ Fractions



θ: theta

Sine

$\sin\theta = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{b}{h}$

Cosine

$\cos\theta = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{a}{h}$

$\tan\theta = \frac{\sin\theta}{\cos\theta} = \frac{\frac{b}{h}}{\frac{a}{h}}$

$\frac{b}{h} \div \frac{a}{h} = \frac{b}{h} * \frac{h}{a} = \frac{b}{a}$

tangent

$\tan\theta = \frac{\text{opposite}}{\text{adjacent}} = \frac{b}{a}$

SIN

$\sin\theta = \frac{opp}{Hyp}$

COS

$\cos\theta = \frac{adj}{Hyp}$

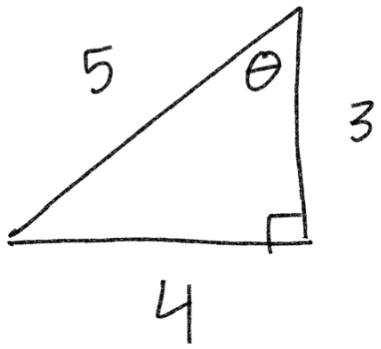
TAN

$\tan\theta = \frac{opp}{adj}$

SOH

CAH

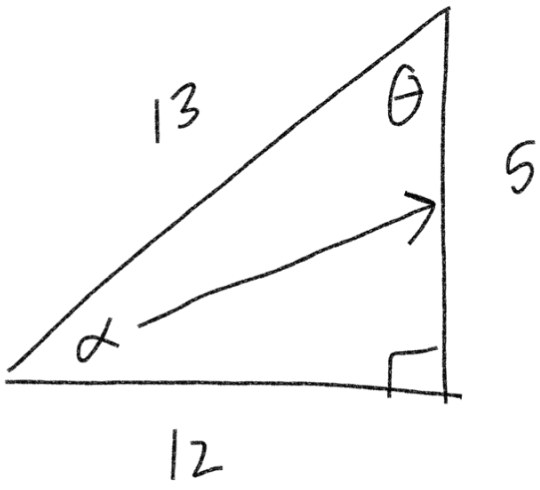
TOA



$\sin\theta = \frac{opp}{hyp} = \boxed{\frac{4}{5}}$

$\cos\theta = \frac{adj}{hyp} = \boxed{\frac{3}{5}}$

$\tan\theta = \frac{opp}{adj} = \boxed{\frac{4}{3}}$



1) $\sin\theta = \boxed{\frac{opp}{hyp}} = \frac{12}{13}$

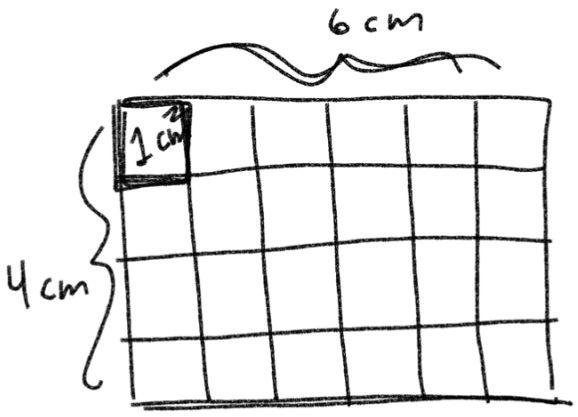
2) $\tan\theta = \frac{opp}{adj} = \frac{12}{5}$

3) $\cos\theta = \frac{adj}{hyp} = \frac{5}{13}$

4) $\cos\alpha = \frac{adj}{hyp} = \frac{12}{13}$

5) $\sin\alpha = \frac{opp}{hyp} = \frac{5}{13}$

6) $\tan\alpha = \frac{opp}{adj} = \frac{5}{12}$

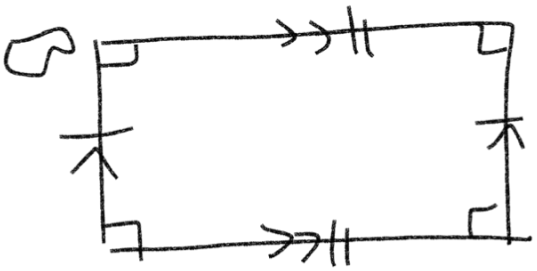


Area = base * height

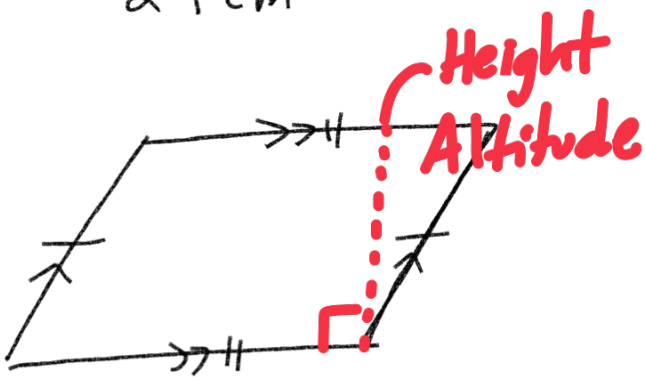
A = bh

Area = (6 cm)(4 cm)

= 24 cm² ← squared



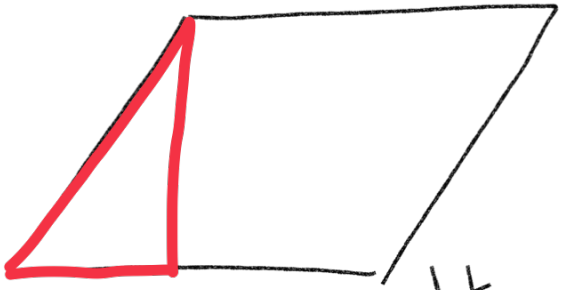
base

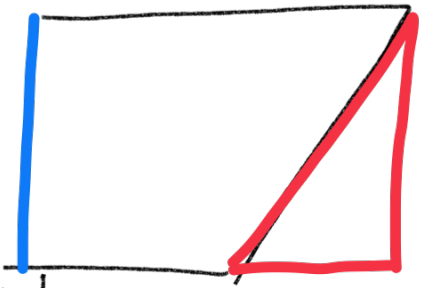


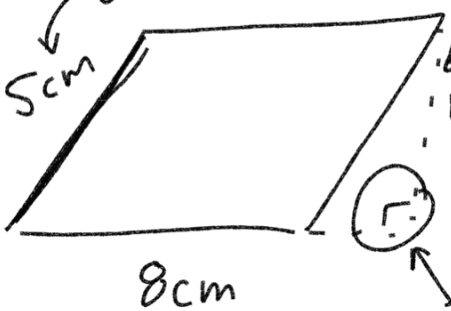
base

Area = base * height
altitude

parallelogram → rectangle

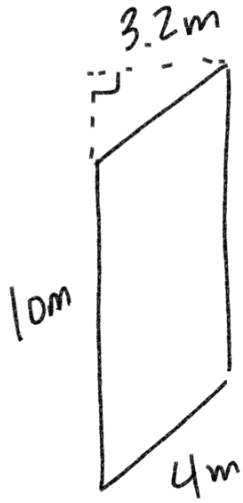






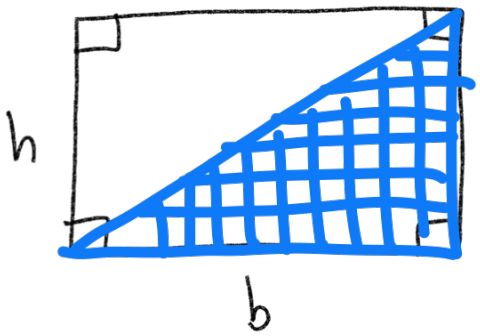
A = (8cm)(4cm)

32cm²



$A = bh$

$= (10m)(3.2m) = \boxed{32\ m^2}$

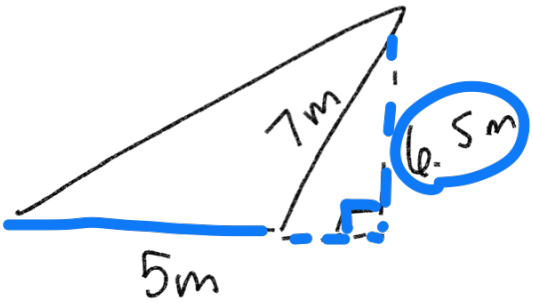


Area of rectangle $= bh$

Area of **Triangle** $= \frac{1}{2}bh$

$\frac{1}{2}$ of rectangle is a triangle

$A = \frac{1}{2}(\text{base})(\text{height})$

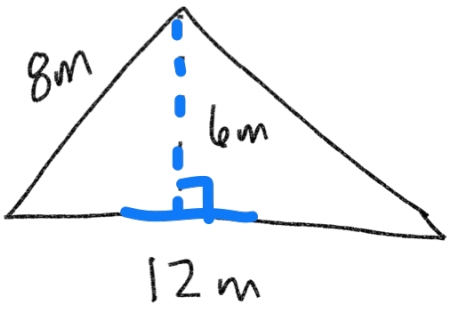


$\text{Area} = \frac{1}{2}bh$

$\frac{1}{2}(5m)(6.5m)$

$= \boxed{16.25\ m^2}$

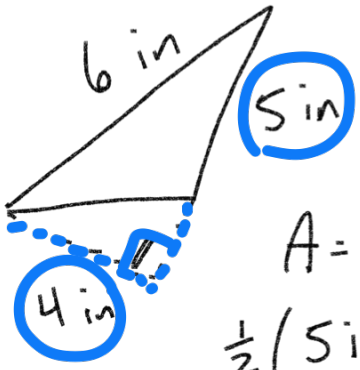
1.)



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

$= \frac{1}{2}(12m)(6m) = \boxed{36\ m^2}$

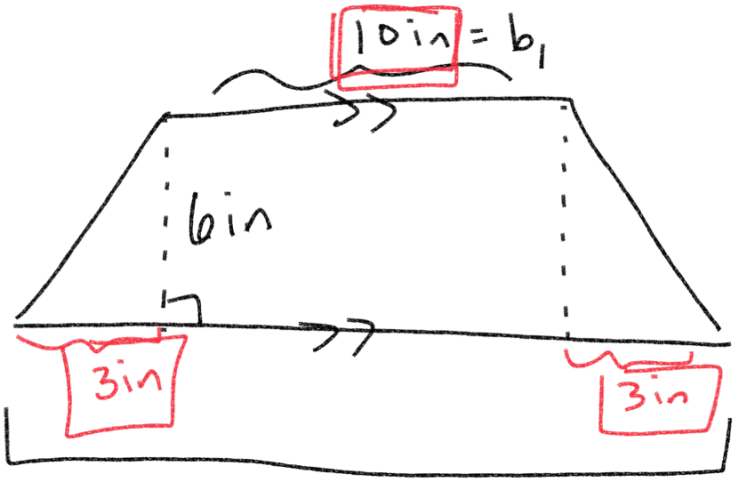
2.)



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

$\frac{1}{2}(5in)(4in)$

$= \boxed{10\ in^2}$



16 in = b_2

Area of Trapezoid

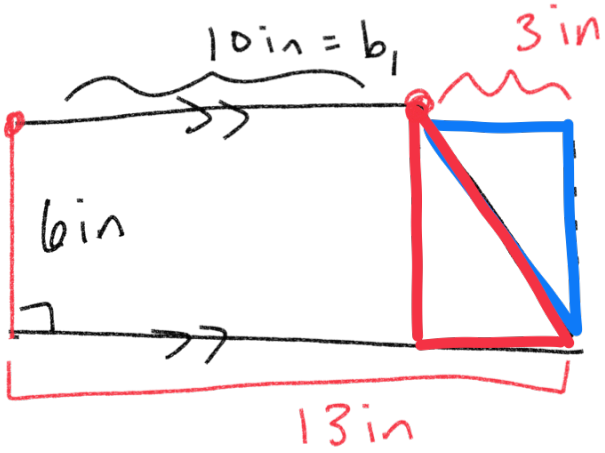
$$A = \left(\frac{b_1 + b_2}{2}\right)h$$

$$\left(\frac{10in + 16in}{2}\right)(6in)$$

$$\frac{26in}{2} = 13in$$

$$(13in)(6in)$$

$$= 78in^2$$



$$A = (13in)(6in)$$

$$78in^2$$