

# Quiz Review!

1.  $\sqrt{36} = 6$

2.  $\sqrt{8} = \sqrt{4 \cdot 2} = 2\sqrt{2}$

3.  $2\sqrt{200} = 2\sqrt{100 \cdot 2}$   
 $= 2 \cdot 10\sqrt{2}$   
 $= 20\sqrt{2}$

4.  $3\sqrt{12x^2} = 3\sqrt{4 \cdot 3x^2}$   
 $= 3\sqrt{4} \cdot \sqrt{3} \cdot \sqrt{x^2}$   
 $= 3 \cdot 2 \cdot x \cdot \sqrt{3}$   
 $= 6x\sqrt{3}$

$$\begin{aligned} 5. \quad & 2\sqrt{3} - 3\sqrt{5} + 6\sqrt{5} - 4\sqrt{3} \\ & = -2\sqrt{3} + 3\sqrt{5} \end{aligned}$$

$$\begin{aligned} 6. \quad & \sqrt{18} - 3\sqrt{8} + 3\sqrt{25} - 5 \\ & = \sqrt{9 \cdot 2} - 3\sqrt{4 \cdot 2} + 3 \cdot 5 - 5 \\ & = 3\sqrt{2} - 6\sqrt{2} + 15 - 5 \\ & = -3\sqrt{2} + 10 \end{aligned}$$

$$\begin{aligned} & 7 \quad 2\sqrt{45} + 3\sqrt{25} - \sqrt{80} \\ & = 2\sqrt{9 \cdot 5} + 15 - \sqrt{16 \cdot 5} \\ & = 6\sqrt{5} + 15 - 4\sqrt{5} \\ & = 2\sqrt{5} + 15 \end{aligned}$$

$$\begin{aligned} 8. & \quad \underline{(3\sqrt{3})} \underline{(4\sqrt{5})} \\ & = 3 \cdot 4 \cdot \sqrt{3} \cdot \sqrt{5} \\ & = 12\sqrt{15} \end{aligned}$$

$$\begin{aligned} & 3\sqrt{6} - 2\sqrt{2}(\sqrt{27} + 3\sqrt{3}) \\ &= 3\sqrt{6} - 2\sqrt{2}(\sqrt{9 \cdot 3} + 3\sqrt{3}) \\ &= 3\sqrt{6} - 2\sqrt{2}(3\sqrt{3} + 3\sqrt{3}) \\ &= 3\sqrt{6} - 2\sqrt{2}(6\sqrt{3}) \\ &= 3\sqrt{6} - 12\sqrt{6} \\ &= -9\sqrt{6} \end{aligned}$$

$$= (3\sqrt{8} + \sqrt{3})(2\sqrt{18} - 3\sqrt{48})$$
$$= (3\sqrt{4 \cdot 2} + \sqrt{3})(2\sqrt{9 \cdot 2} - 3\sqrt{16 \cdot 3})$$

$$= \underline{(6\sqrt{2} + \sqrt{3})} \underline{(6\sqrt{2} - 12\sqrt{3})}$$

$$= (6\sqrt{2} \cdot 6\sqrt{2}) - (6\sqrt{2} \cdot 12\sqrt{3}) + (\sqrt{3} \cdot 6\sqrt{2}) - (\sqrt{3} \cdot 12\sqrt{3})$$

$$= 36\sqrt{4} - 72\sqrt{6} + 6\sqrt{6} - 12\sqrt{9}$$

$$= 36 \cdot 2 - 72\sqrt{6} + 6\sqrt{6} - 12 \cdot 3$$

$$= 72 - 66\sqrt{6} - 36 = 36 - 66\sqrt{6}$$

$$= (\sqrt{3} - \sqrt{7})^2$$
$$= (\sqrt{3} - \sqrt{7})(\sqrt{3} - \sqrt{7})$$

$$= \sqrt{9} - \sqrt{21} - \sqrt{21} + \sqrt{49}$$

$$= 3 - \sqrt{21} - \sqrt{21} + 7$$

$$= 10 - 2\sqrt{21}$$

$$12. \quad \frac{10}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{10\sqrt{5}}{\sqrt{25}}$$

$$\frac{\sqrt{100}}{\sqrt{5}} = \sqrt{\frac{100}{5}}$$

$$= \sqrt{20}$$

$$= \sqrt{4 \cdot 5}$$

$$= 2\sqrt{5}$$

$$= \frac{10\sqrt{5}}{5}$$

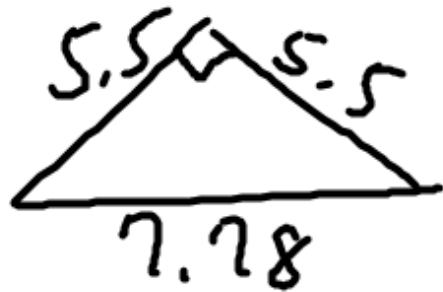
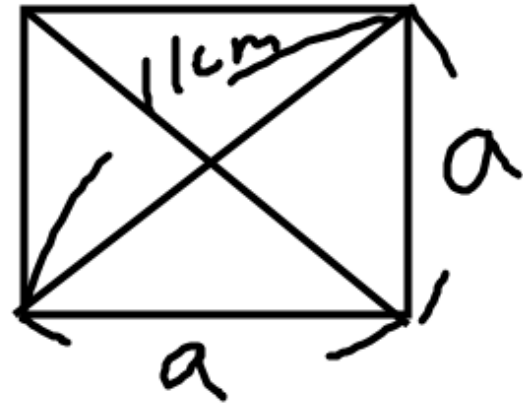
$$= \frac{10}{5} \cdot \sqrt{5}$$

$$= 2\sqrt{5}$$



$$\begin{aligned} 13. & (4-\sqrt{3})(4+\sqrt{3}) \\ & = 4 \cdot 4 + \cancel{4\sqrt{3}} - \cancel{4\sqrt{3}} - \sqrt{9} \\ & = 16 - 3 \\ & = 13 \text{ m}^2 \end{aligned}$$

7.



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

$$11^2 = a^2 + b^2$$

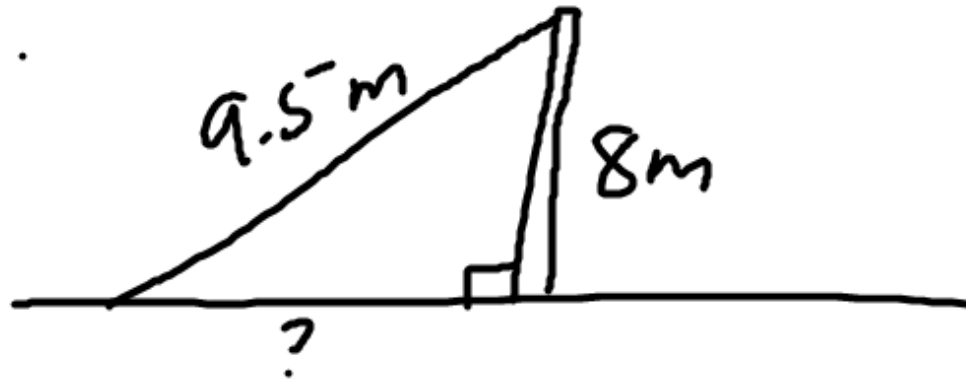
$$121 = a^2 + a^2$$

$$121 = 2a^2$$

$$60.5 = a^2$$

$$a = \sqrt{60.5} \approx 7.78$$

10.



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

$$(9.5)^2 = 8^2 + b^2$$

$$90.25 = 64 + b^2$$

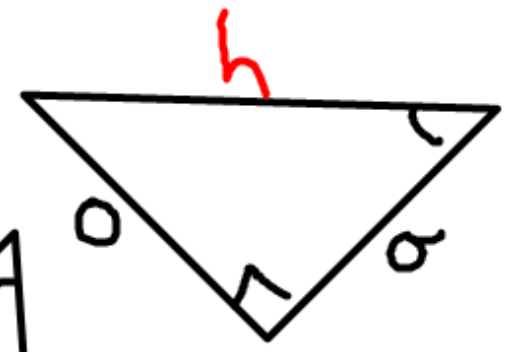
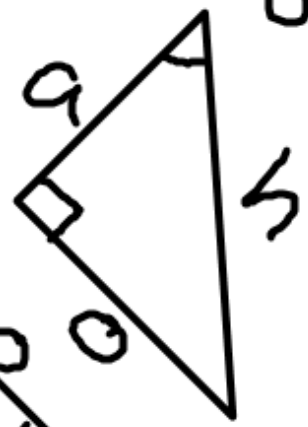
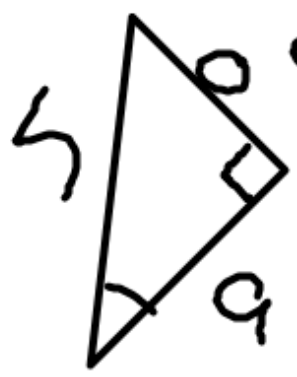
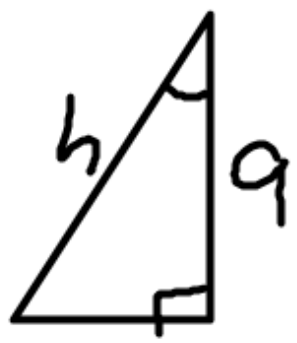
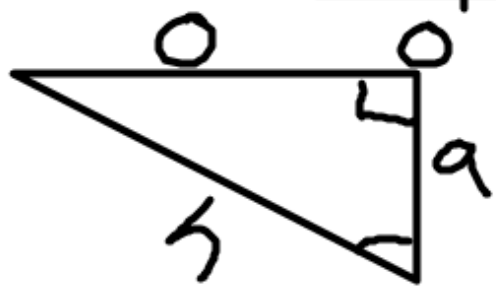
$$90.25 - 64 = b^2$$

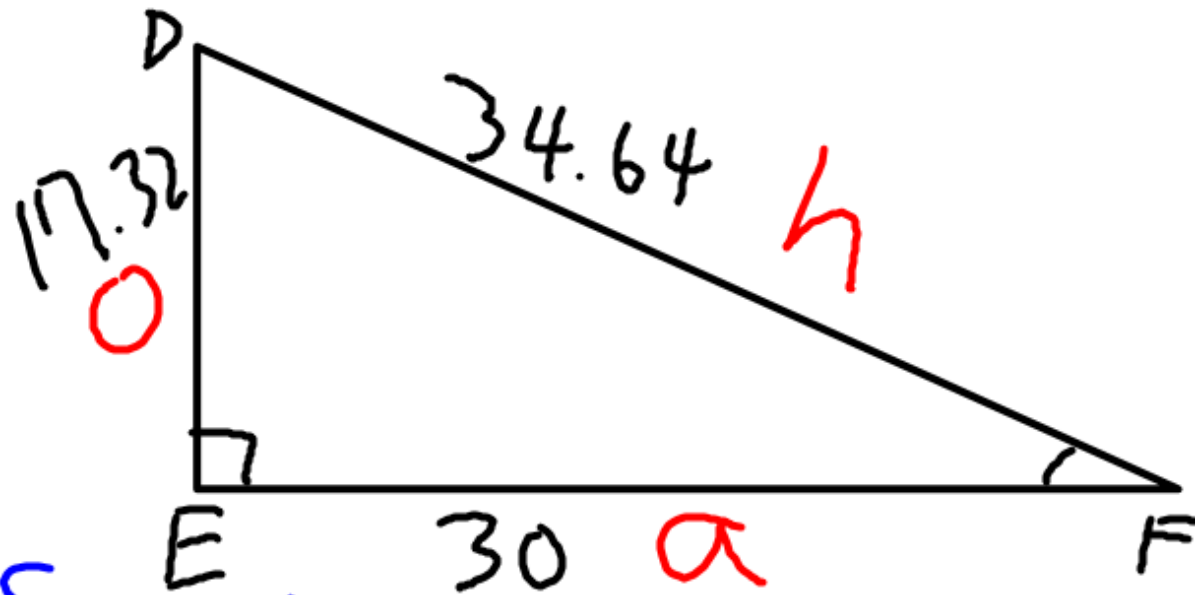
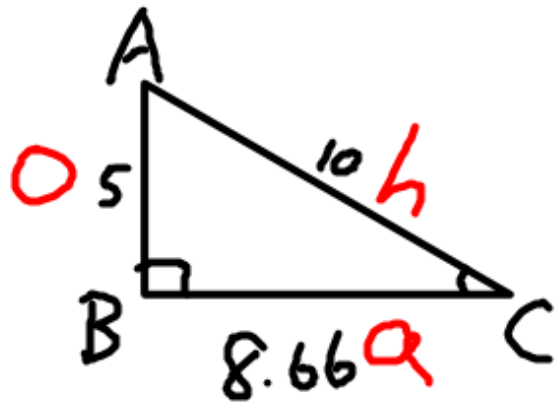
$$b = \sqrt{26.25} = 5.12$$

# Labelling Triangles



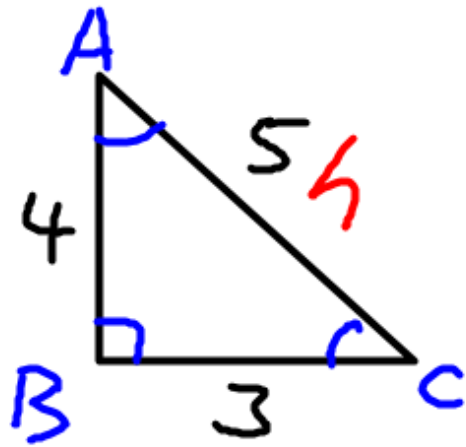
opposite





$$\frac{0}{h} = 0.5 = \sin(C)$$

$$\frac{a}{h} = 0.866 = \cos(C) \quad \frac{0}{a} = 0.577 = \tan(C)$$



$$\sin(A) = \frac{o}{h} = \frac{3}{5}$$

$$\tan(C) = \frac{o}{a} = \frac{4}{3}$$

$$\tan(A) = \frac{o}{a} = \frac{3}{4}$$

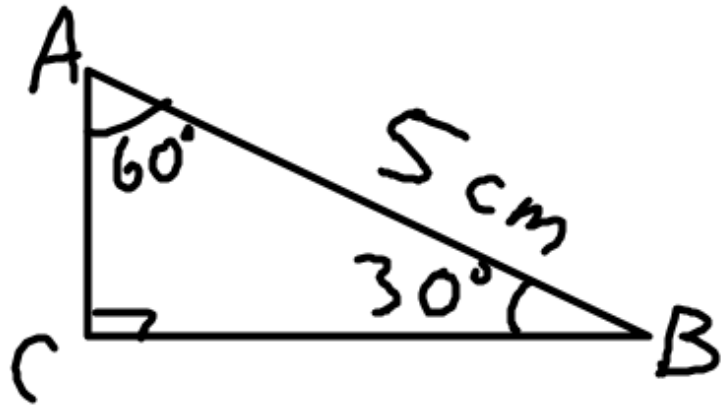
$$\cos(A) = \frac{a}{h} = \frac{4}{5}$$

$$\sin(C) = \frac{o}{h} = \frac{4}{5}$$

$$\cos(B) = \frac{a}{h} = \text{no sol}$$

$$\cos(A) = \sin(C)$$

$$\sin(A) = \cos(C)$$



Find  $\overline{AC}$ ,  $\overline{BC}$  !

$$\sin A = \frac{o}{h} = \frac{\overline{BC}}{\overline{AB}}$$
$$\sin 60^\circ = \frac{\overline{BC}}{5}$$