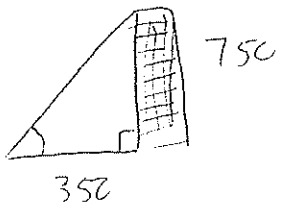
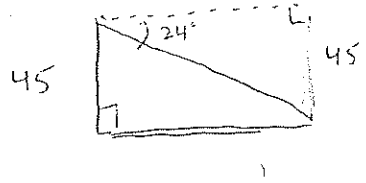
1.



$\text{Tan}^{-1}\left(\frac{75}{35}\right) \approx 64.98^\circ$

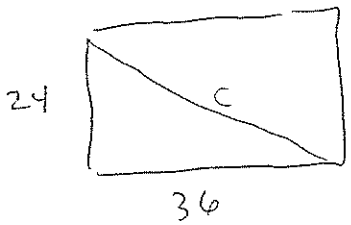
2.



$\text{Tan } 24^\circ = \frac{45}{x}$

$x = \frac{45}{\text{Tan } 24^\circ} \approx 101.07 \text{ ft}$

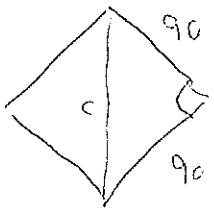
3.



$c = \sqrt{24^2 + 36^2}$

$c \approx 43.27 \text{ in}$

4.



$c = \sqrt{90^2 + 90^2}$

$c = \sqrt{2 \cdot 90^2}$ also 45-45-90 !

$c = 90\sqrt{2} \approx 127.23 \text{ ft}$

5.

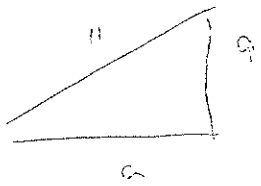
6.

$5^2 + b^2 = 13^2$

$b^2 = 144$

$b = 12 \longrightarrow$ yes its a triple

7.



$a^2 + 9^2 = 11^2$

$a^2 = 40$

$a = 2\sqrt{10}$ → No, not a triple

8. 36, 77, 85 $\quad 36^2 + 77^2 \square 85^2 \rightarrow 7225 \boxed{=} 7225$

Right △!

$36 + 77 > 85$
$77 + 85 > 36$
$36 + 85 > 77$, yes △

$\sqrt{8}, 4, 6$

1

2.—

$\sqrt{8} + 4 > 6$
$4 + 6 > \sqrt{8}$
$\sqrt{8} + 6 > 4$, yes △

$\sqrt{8}^2 + 4^2 \square 6^2$

$8 + 16 \quad 36$

$24 < 36$

obtuse △!

9. $m\angle A = \boxed{73.74°}$ $\quad BC = 24$

$m\angle B = \boxed{16.26°}$ $\quad AC = \boxed{7}$

$m\angle C = 90°$ $\quad AB = 25$

$a^2 + 24^2 = 25^2$

$a = \sqrt{25^2 - 24^2}$

$a = \sqrt{49}$

$a = 7$

$\cos^{-1}\left(\frac{24}{25}\right) \approx 16.26°$

10. $m\angle E = \boxed{45}$ $FG = 5$

$m\angle G = 90°$ $EF = \boxed{5\sqrt{2}}$

$m\angle F = 45°$ $EG = \boxed{5}$

45-45-90 !

11. $\sin A = \frac{21}{29}$ $\cos A = \frac{20}{29}$ $\tan A = \frac{21}{20}$

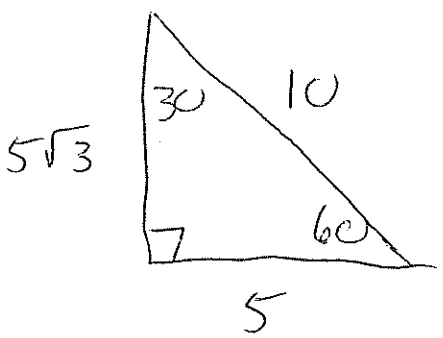
$\sin B = \frac{20}{29}$ $\cos B = \frac{21}{29}$ $\tan B = \frac{20}{21}$

12. $\tan 36 = \frac{y}{10}$ $\cos 36 = \frac{10}{x}$

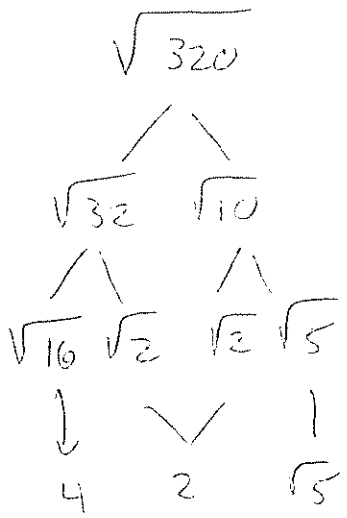
$y = 10 \tan 36°$ $x = \frac{10}{\cos 36°}$

$y \approx 7.27$ $x \approx 12.36$

13.



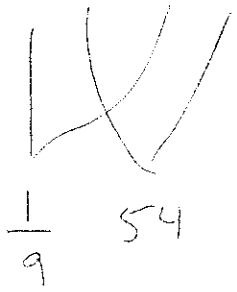
14.



$8\sqrt{5}$

$$\sqrt{\frac{15}{125}} \rightarrow \sqrt{\frac{3}{25}} \rightarrow \frac{\sqrt{3}}{\sqrt{25}} \rightarrow \boxed{\frac{\sqrt{3}}{5}}$$

$$\left(\frac{1}{3}\cdot\sqrt{54}\right)^2 \rightarrow \frac{1}{3}\sqrt{54}\cdot\frac{1}{3}\sqrt{54}$$



$\boxed{6}$