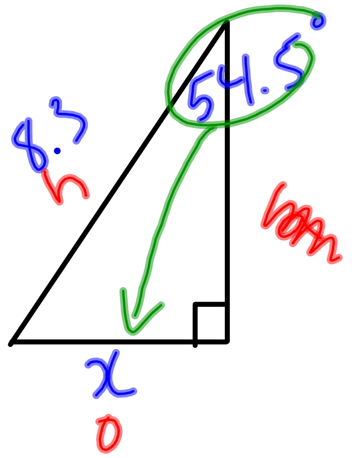


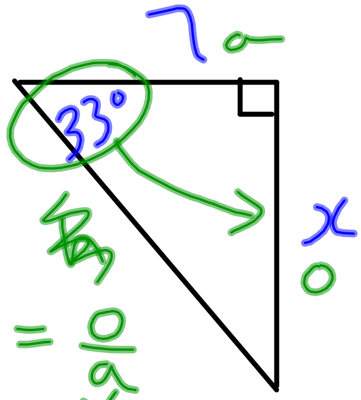
$\sin\theta = \frac{o}{h}$

$\frac{\sin 54.5^\circ}{1} = \frac{x}{8.3}$

$\frac{\sin 54.5^\circ}{1} \times \frac{x}{8.3}$

$\frac{\sin 54.5^\circ \times 8.3}{1} = x$

$6.8 = x$

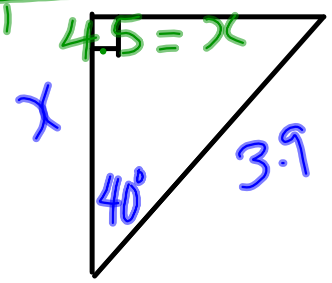


$\tan\theta = \frac{o}{a}$

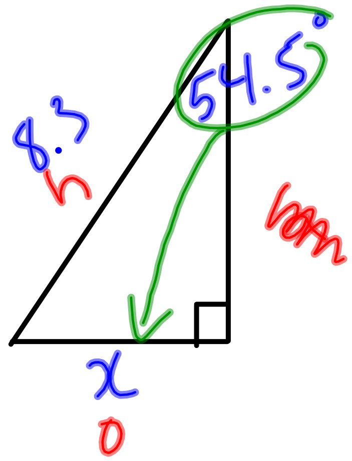
$\frac{\tan 33^\circ}{1} = \frac{x}{7}$

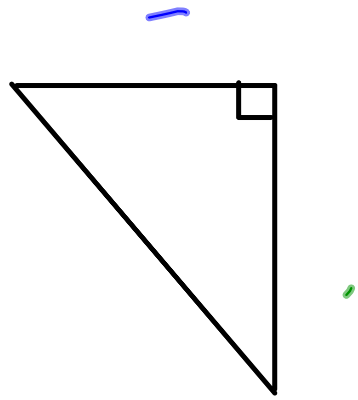
$\frac{\tan 33 \times 7}{1} = x$

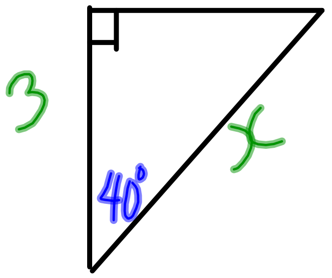
$4.5 = x$



$\frac{3}{5} \times \frac{x}{7}$







$\sin\theta = \frac{o}{h}$

$\frac{\sin 54.5^\circ}{1} = \frac{x}{8.3}$

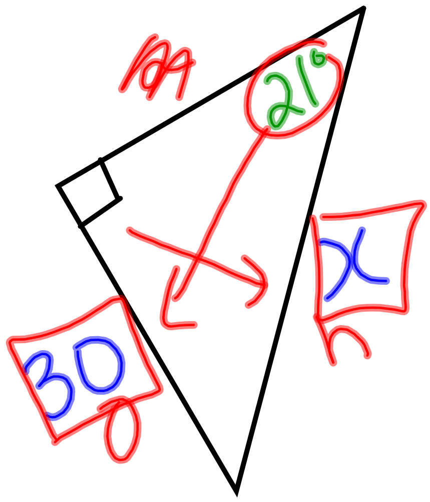
$\frac{\sin 54.5^\circ}{1} \overset{x}{\underset{\div}{=}} \frac{x}{8.3}$

$\frac{\sin 54.5^\circ \times 8.3}{1} = x$

$6.8 \doteq x$

$\frac{3}{5} \overset{x}{\underset{\div}{=}} \frac{x}{7}$

2-5 1, 4, 7



83.7
≈ 84

7b 6d.
1 11. ,15

6 a

$$f'(x) = \lim_{h\to 0} \frac{\sqrt{3(x+h)+2} - \sqrt{3x+2}}{h}$$

$$= \lim_{h\to 0} \frac{\qquad}{h} \cdot \frac{(\sqrt{\ } + \sqrt{\ })}{(\sqrt{\ } + \sqrt{\ })}$$

$$= \lim_{h\to 0} \frac{\cancel{3x}+3\cancel{h}+\cancel{2}-(\cancel{3x}+\cancel{2})}{\cancel{h}(\sqrt{\ } + \sqrt{\ })}$$

$$= \lim_{h\to 0} \frac{3}{\sqrt{3(x+h)+2} + \sqrt{3x+2}}$$

$$= \frac{3}{\sqrt{3x+2} + \sqrt{3x+2}}$$

$$= \frac{3}{2\sqrt{3x+2}}$$

11. $f(x) = \sqrt{x+1}$

$f(x) = (x+1)^{1/2}$

$f'(x) = \frac{1}{2}(x+1)^{-1/2}$

$\frac{1}{6} = \frac{1}{2\sqrt{(x+1)}}$

$x - 6y + 4 = 0$

$6y = x + 4$

$y = \boxed{\frac{1}{6}}x + \frac{4}{6}$

tangent to have slope $\frac{1}{6}$

$f'(x) = \frac{1}{6}$

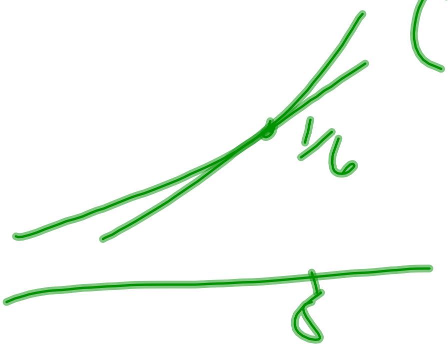
$\frac{1}{6} = \frac{1}{2(\sqrt{x+1})}$

$6 = 2\sqrt{x+1}$

$(3)^2 = (\sqrt{x+1})^2$

$9 = x + 1$

$8 = x$



$y = mx + b$

$3 = \frac{1}{6}(8) + b$

$$y = \frac{\pi}{3}$$

$$y = 1.$$

7b) $f(x) = \dfrac{x+1}{x-1}$ $\qquad \dfrac{f(x+h)-f(x)}{h}$

$$f'(x) = \lim_{h\to 0} \frac{\dfrac{(x+h)+1}{x+h-1} - \dfrac{x+1}{x-1}}{h}$$

$$= \lim_{h\to 0} \frac{\dfrac{(x+h+1)(x-1) - (x+1)(x+h-1)}{(x+h-1)(x-1)}}{h}$$

$$= \lim_{h\to 0} \frac{x^2 \cancel{-x} + hx - h \cancel{+x} - 1 - (x^2 + xh \cdots)}{h(x+h-1)(x-1)}$$

$$= \lim_{h\to 0} \frac{\cancel{x^2} + \cancel{hx} - h \cancel{-1} - \cancel{x^2} - \cancel{xh} - h \cancel{+1}}{h(\quad x \quad)}$$

$$= \lim_{h\to 0} \frac{-2\cancel{h}}{\cancel{h}(\quad)(\quad)}$$

$$= \frac{-2}{(x-1)(x-1)}$$

$$= \frac{-2}{(x-1)^2}$$

$$\frac{dy}{dx} = f'(x)$$