Math 41
Quiz 2
January 27, 2016

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1. Find slope intercept form of the equation of the line through $(2,-3)$ and ***perpendicular*** to the line $y=-\frac{2}{5}x-1$.

m of given line $m=-\frac{2}{5}$

perpendicular slope $m=\frac{5}{2}$

$y-y_1=m(x-x_1)$

$y-(-3)=\frac{5}{2}(x-2)$

$y+3=\frac{5}{2}x-5$

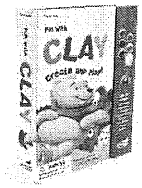
$y=\frac{5}{2}x-8$

2. Find the equation of the vertical line through the point $(4,-1)$.

m is undefined

$x=4$

3. A toy store is introducing a new **Disney** educational craft-clay modeling kit called, **"Playing With Pooh"**. It has determined that in January it has sold 100 kits and expects to sell 300 kits in March. Find a linear equation that gives the number of kits, N, in terms of the month, t. Let $t=1$ correspond to January.



N in terms of t

(t,N)

$(1,100)\ (3,300)$

$m=\frac{\Delta N}{\Delta t}=\frac{300-100}{3-1}=\frac{200}{2}=100$

$N-N_1=m(t-t_1)$

$N-100=100(t-1)$

$N-100=100t-100$

$N=100t$