OLYMPIC STEEL
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Advanced Math

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12) $(2,4)(4,-4)$

$\frac{4-(-4)}{2-4} = \frac{8}{-2} = \boxed{-4}$

14) $(0,-10)(-4,0)$

$\frac{-10-0}{0-(-4)} = \frac{-10}{4} = \boxed{-\frac{5}{2}}$

16) $(\frac{7}{8}, \frac{3}{4})(\frac{5}{4}, -\frac{1}{4})$

$\frac{\frac{3}{4}-(-\frac{1}{4})}{\frac{7}{8}-\frac{10}{8}} = \frac{1}{-\frac{3}{8}} = \boxed{-\frac{8}{3}}$

24) $(-2,-1)(1,5)$ and $(1,3)(5,-5)$

$m = \frac{-1-5}{-2-1} = \frac{-6}{-3} = \boxed{2}$ $\quad \frac{3-(-5)}{1-5} = \frac{8}{-4} = \boxed{-2}$

neither

26) $(4,8)(-4,2)$ and $(3,-5)(-1,\frac{1}{3})$

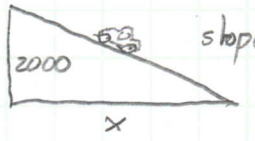
$m = \frac{8-2}{4-(-4)} = \frac{6}{8} = \boxed{\frac{3}{4}}$ $\quad \frac{-5-\frac{1}{3}}{3-(-1)} = \frac{-\frac{16}{3}}{4}$

perpendicular $= -\frac{16}{3} \cdot \frac{1}{4} = \boxed{-\frac{4}{3}}$

31) a) 89-90
b) 88-89

32) 93-94

33)



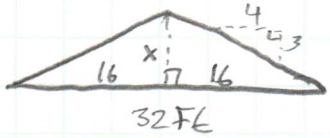
slope $-\frac{12}{100}$ $\quad \frac{12}{100} = \frac{2000}{x}$

$12x = 200000$

$\boxed{x = 16666\frac{2}{3}\text{ FT}}$

$\boxed{\approx 3.16\text{ mi}}$

34)



$\frac{x}{16} = \frac{3}{4}$ $\quad 4x = 48$ $\quad \boxed{x = 12\text{ FT}}$

36) $2x+3y-9=0$

$3y = -2x+9$

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

$m = -\frac{2}{3}$, $b = 3$

38) $3y+5=0$

$3y = -5$

$y = -\frac{5}{3}$

$m=0, b=-\frac{5}{3}$

40) $x-y-10=0$

$x-10=y$

$m=1$, $b=-10$

42) $\frac{3-(-4)}{4-(-4)} = \frac{7}{8}$

$y = \frac{7}{8}x+b$

$3 = \frac{7}{8}(4)+b$

$3 = \frac{7}{2}+b$

$3-\frac{7}{2} = b = -\frac{1}{2}$

$\boxed{y = \frac{7}{8}x - \frac{1}{2}}$

44) $\frac{4-4}{-1-6} = \frac{0}{-7} = 0$

$y = 0x+b$

$\boxed{y = 4}$

46) $\frac{1-(-\frac{2}{3})}{1-6} = \frac{\frac{5}{3}}{-\frac{5}{1}}$

$(\frac{5}{3})(-\frac{1}{5}) = -\frac{1}{3}$

$y = -\frac{1}{3}x+b$

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

$\frac{4}{3} = b$

$\boxed{y = -\frac{1}{3}x + \frac{4}{3}}$

48) $\frac{.6-(-2.4)}{-8-2} = \frac{\frac{3}{5}+\frac{12}{5}}{-10} = -\frac{3}{10}$

$y = -\frac{3}{10}x+b$

$\frac{3}{5} = -\frac{3}{10}(-8)+b$

$\frac{3}{5} = \frac{12}{5}+b$

$-\frac{9}{5} = b$

$\boxed{y = -\frac{3}{10}x - \frac{9}{5}}$

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50) $y=-1x+b$
$10=-1(0)+b$
$10=b$
$y=-1x+10$

52) $y=4x+b$
$0=4(0)+b$
$0=b$
$y=4x$

54) $y=\frac{3}{4}x+b$
$-5=\frac{3}{4}(2)+b$
$-\frac{10}{2}=\frac{3}{2}+b$
$-\frac{7}{2}=b$
$y=\frac{3}{4}x-\frac{7}{2}$

56) $y=0x+b$
$y=b$
$4=b$
$y=4$

58) $y=-3x+b$
$\frac{3}{2}=-3(\frac{1}{2})+b$
$\frac{3}{2}=\frac{3}{2}+b$
$0=b$
$y=-3x$

60) $(-3,0)$ $(0,4)$
$m=\frac{0-4}{-3-0}=\frac{4}{3}$
y-int
$b=$
$y=\frac{4}{3}x+4$

62) $(\frac{2}{3},0)(0,-2)$
$\frac{0-(-2)}{\frac{2}{3}-0}=\frac{2}{\frac{2}{3}}=\frac{2}{1}\cdot\frac{3}{2}=3$
$y=3x-2$

64) $(a,0)(0,a)$
$\frac{0-a}{a-0}=\frac{-a}{a}=-1$
$y=-1x+b$ use $(-3,4)$
$4=-1(-3)+b$
$4=3+b$
$1=b$
$y=-1x+1$

66) $x+y=7$
$y=-1x+7$ $m=-1$

$\parallel$ $m=-1$	$\perp$ $m=1$
$y=-1x+b$	$y=1x+b$
$2=-1(-3)+b$	$2=1(-3)+b$
$2=3+b$	$5=b$
$-1=b$	
$y=-1x-1$	$y=1x+5$

68) $5x+3y=0$
$3y=-5x$
$y=-\frac{5}{3}x$
$m=-\frac{5}{3}$

$\parallel$ $m=-\frac{5}{3}$	$\perp$ $m=\frac{3}{5}$
$y=-\frac{5}{3}x+b$	$y=\frac{3}{5}x+b$
$\frac{7}{8}=-\frac{5}{3}(\frac{7}{8})+b$	$\frac{7}{8}=\frac{3}{5}(\frac{7}{8})+b$
$\frac{168}{24}=-\frac{35}{24}+b$	$\frac{70}{40}=\frac{21}{40}+b$
$\frac{53}{24}=b$	$\frac{9}{40}=b$
$y=-\frac{5}{3}x+\frac{53}{24}$	$y=\frac{3}{5}x+\frac{9}{40}$

70) $x=4$ no slope

$\parallel$ $\rightarrow$ no slope	$\perp$ 0-slope
$x=$	$y=$
$x=2$	$y=5$