

Warm Up

$y = mx + b$

Are the following line pair parallel, perpendicular or neither?

1. $4x + y = 5$ & $3x + 12y = -6$

$y = -4x + 5$
neither

$\frac{1}{4}x + y = -\frac{1}{2}$
 $y = -\frac{1}{4}x - \frac{1}{2}$

2. $6x - 12y = 24$ & $4x + 2y = 8 \rightarrow 2y = -4x + 8$

$-12y = -6x + 24$
 $y = \frac{1}{2}x - 2$
perpendicular

3. Write the equation of the line parallel to $3x - 5y = 12$ through $(9, -2)$

$-5y = -3x + 12$
 $y = \frac{3}{5}x - \frac{12}{5}$

① their slope

② your slope: $3/5$

$y = \frac{3}{5}x - \frac{37}{5}$

③ $-2 = \frac{3}{5}(9) + b$

$-\frac{10}{5} = \frac{27}{5} + b$

$-37/5 = b$

AAT Linear Word Problem Examples:

1. The movie theater you work for pays you \$12 per hour plus \$0.50 for each upgrade you sell. Write an equation relating your hourly wage W with the number of upgrades you sell per hour, x .

$W = 0.5x + 12$

2. You buy the new iPhone for \$750. However, the store clerk tells you that this phone will not hold the upgrades after 5 years and you will only be able to sell it back for \$50. Write an equation that shows the value of the phone.

$(0, 750)$

$(5, 50)$

$m = \frac{750 - 50}{0 - 5} = \frac{700}{-5} = -140$

$y = -140x + 750$