

12-12-13
3rd Trig

⑥② \perp to $y = -2x + 4$
(4, 1) $m = -2$
 $\perp m = \frac{1}{2}$

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

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

$$\begin{array}{r} y - 1 = \frac{1}{2}x - 2 \\ +1 \qquad +1 \end{array}$$

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

⑦① $\begin{cases} y = 3x - 5 \\ y = 2x - 1 \end{cases}$

$$\begin{array}{r} 3x - 5 = 2x - 1 \\ -2x \quad -2x \end{array}$$

$$\begin{array}{r} x - 5 = -1 \\ +5 \quad +5 \\ \hline x = 4 \end{array}$$

$$\begin{aligned} y &= 2(4) - 1 \\ y &= 7 \end{aligned}$$

⑦③ $\begin{cases} 2x + 3y = 8 \Rightarrow -4x - 6y = -16 \\ 4x + 2y = 12 \Rightarrow 4x + 2y = 12 \end{cases}$

$$\begin{array}{r} -4x - 6y = -16 \\ \underline{4x + 2y = 12} \\ -4y = -4 \\ y = 1 \end{array}$$

⑦④ $\begin{bmatrix} 3 & -2 \\ -1 & -4 \end{bmatrix} \cdot \begin{bmatrix} 2 \\ 5 \end{bmatrix} \begin{bmatrix} 3 \\ 9 \end{bmatrix}$

$$\begin{bmatrix} 6 - 10 & 9 - 18 \\ -2 - 20 & -3 - 36 \end{bmatrix}$$

$$\begin{bmatrix} -4 & -9 \\ -22 & -39 \end{bmatrix}$$

$$(78) \begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix} \cdot \begin{bmatrix} 3 & -2 \\ -1 & -4 \end{bmatrix}$$

$$\begin{bmatrix} 6-3 & -4-12 \\ 6-4 & -4-16 \end{bmatrix} = \begin{bmatrix} 3 & -16 \\ 2 & -20 \end{bmatrix}$$

$$(80) \begin{bmatrix} 2 & 3 & 1 \end{bmatrix} \cdot \begin{bmatrix} 3 \\ 4 \\ 2 \end{bmatrix}$$

1×3 3×1

$$[6+12+2] = [20]$$

$$(81) DE = ED$$

$\downarrow \downarrow \downarrow \downarrow$
 $1 \times 3 \quad 3 \times 1 \quad 3 \times 1 \quad 1 \times 3$

$$(83) \begin{array}{r} 4x + 2y = 9 \\ -4x = -4x \\ \hline 2y = -4x + 9 \\ \frac{2y}{2} = \frac{-4x}{2} + \frac{9}{2} \\ y = -2x + 4\frac{1}{2} \end{array}$$

$m = -2$ parallel slope is same

$$(114) f(x) = x^2 - 5$$

$$\textcircled{1} y = x^2 - 5$$

$$\textcircled{2} x = y^2 - 5$$

$$\begin{array}{r} x + 5 = y^2 \\ \sqrt{x+5} = \sqrt{y^2} \\ \pm \sqrt{x+5} = y \end{array} \quad \begin{array}{l} \sqrt{y^2} = \sqrt{16} \\ y = \pm 4 \end{array}$$

(116) slope of line that is

$$\perp \text{ to } 2x - 4y = 10$$

$$\begin{array}{r} -4y = -2x + 10 \\ -4y = -2x + 10 \\ \hline -4y = -2x + 10 \\ -4 = -4 \\ \hline y = \frac{1}{2}x - 2\frac{1}{2} \end{array}$$

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

$\perp m = -2$

$$\textcircled{128} \quad (2, -1) \quad (3, -9)$$

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

$$m = \frac{\Delta y}{\Delta x} = \frac{-1 - (-9)}{2 - 3} = \frac{8}{-1} = -8$$

$$y - (-1) = -8(x - 2)$$

$$\begin{array}{r} y + 1 = -8x + 16 \\ \underline{-1 \qquad -1} \\ y = -8x + 15 \end{array}$$

$\textcircled{132}$

parallel to $12x + 2y = 8$

$(-1, 2)$

$$\begin{array}{r} 12x + 2y = 8 \\ \underline{-12x} \quad \underline{-12x} \end{array}$$

$$\frac{2y}{2} = \frac{-12x + 8}{2}$$

$$y = \boxed{-6}x + 4$$

$$m = -6$$

$$y - 2 = -6(x - (-1))$$

$$\begin{array}{r} y - 2 = -6x - 6 \\ \underline{+2 \qquad +2} \end{array}$$

$$\begin{array}{r} y = -6x - 4 \\ \underline{+6x \quad +6x} \end{array}$$

$$6x + y = -4$$

12-12-13
4th Trig

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$$\begin{bmatrix} 3 & -2 \\ -1 & -4 \end{bmatrix} \cdot \begin{bmatrix} 2 & 3 \\ 5 & 9 \end{bmatrix}$$

$$\begin{bmatrix} 6-10 & 9-18 \\ -2-20 & -3-36 \end{bmatrix} = \begin{bmatrix} -4 & -9 \\ -22 & -39 \end{bmatrix}$$

75

$$\begin{cases} 5x-2y=2 \xrightarrow{m=3} -15x+6y=-6 \\ 3x-3y=-15 \xrightarrow{m=5} 15x-15y=-75 \end{cases}$$

$$\begin{array}{r} -9y = -81 \\ y = 9 \end{array}$$

76

$$\begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix} + \begin{bmatrix} 3 & -2 \\ -1 & -4 \end{bmatrix} = \begin{bmatrix} 5 & 1 \\ 1 & 0 \end{bmatrix}$$

61 parallel to $y=3x-5$ (3,4)

$m=3 \therefore$ parallel
slope is 3

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

$$y-4 = 3(x-3)$$

$$\begin{array}{r} y-4 = 3x-9 \\ +4 \quad +4 \\ \hline y = 3x-5 \end{array}$$

70 \perp to $5x-4y=2$ (6,7)

$$\begin{array}{r} -5x \quad -5x \\ \hline -4y = -5x+2 \\ -4 \quad -4 \\ \hline y = \frac{5}{4}x - \frac{1}{2} \end{array}$$

$\perp m = -\frac{4}{5}$

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

$$y-7 = -\frac{4}{5}(x-6)$$

$$5[y-7 = -\frac{4}{5}x + \frac{24}{5}]$$

$$\begin{array}{r} 5y-35 = -4x+24 \\ +35 \quad +35 \\ \hline 5y = -4x+59 \\ +4x \quad +4x \\ \hline 4x+5y = 59 \end{array}$$

$$(62) \quad y = -2x + 4 \quad (4, 1)$$

$$m = -2$$

$$\perp m = \frac{1}{2}$$

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

$$\begin{array}{r} y - 1 = \frac{1}{2}x - 2 \\ +1 \qquad +1 \end{array}$$

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

(103)

From the 40 shirts I have, I must pick 5 to plan out my week of teaching. How many different looks would I have next week?

Order doesn't matter

$$40 nCr 5 = 658,008$$

(132)

parallel to $12x + 2y = 8$
 $(-1, 2)$

$$\begin{array}{r} 12x + 2y = 8 \\ -12x \qquad -12x \\ \hline 2y = -12x + 8 \\ \frac{2y}{2} = \frac{-12x}{2} + \frac{8}{2} \\ y = -6x + 4 \end{array}$$

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

$$y - 2 = -6(x + 1)$$

$$\begin{array}{r} y - 2 = -6x - 6 \\ +2 \qquad +2 \end{array}$$

$$\begin{array}{r} y = -6x - 4 \\ +6x \qquad +6x \end{array}$$

$$6x + y = -4$$

(109)

Girls

Boys

$$10 nCr 2$$

$$8 nCr 3$$

$$45$$

$$56 = 2520$$



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$$\frac{4}{1^{\text{st}}} \quad \frac{4}{2^{\text{nd}}} \quad \frac{4}{3^{\text{rd}}} \quad \dots \quad 4^{10}$$

1,048,576