

1-6-20 1<sup>st</sup> Trig

⑧ slope  $(n, 6)$   $(n+2, 7)$

$$m = \frac{\Delta y}{\Delta x} = \frac{7-6}{n+2-n} = \frac{1}{2}$$

②1

$$\begin{cases} 2x + 3y = 8 \\ 4x + 2y = 12 \end{cases} \xrightarrow{m=2} \begin{array}{r} -4x - 6y = -16 \\ \underline{4x + 2y = 12} \\ -4y = -4 \\ y = 1 \end{array}$$

④1

$$20nCr2$$
$$190$$

④3

$$\frac{10}{1^{st}} \frac{10}{2^{nd}} \frac{10}{3^{rd}} \frac{10}{4^{th}} \frac{10}{5^{th}} = 100,000$$

$$\textcircled{47} \quad f(x) = 2x \quad g(x) = 5x + 10$$

$$f(g(x)) =$$

$$f(5x+10) = 2 \cdot (5x+10)$$
$$10x+20$$

$$\textcircled{a3} \quad \begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix} + \begin{bmatrix} 3 & -2 \\ -1 & -4 \end{bmatrix} = \begin{bmatrix} 5 & 1 \\ 1 & 0 \end{bmatrix}$$

$$\textcircled{54} \quad \text{parallel to } 12x + 2y = 8 \quad (-1, 2)$$

Get  $y$  by itself

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

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

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

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

$$6x + y = -4$$

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

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

$$y = -6x + 4$$

$$m = -6$$

$$(57) \frac{76!}{74! \cdot 3!}$$

$$\frac{\cancel{76 \cdot 75 \cdot 74 \cdot 73 \cdot 72 \cdot \dots \cdot 2 \cdot 1}}{\cancel{74 \cdot 73 \cdot \dots \cdot 2 \cdot 1} \cdot 3 \cdot 2 \cdot 1}$$

$$\frac{76 \cdot 75}{6}$$

(69) Domain of

$$f(x) = \frac{x^{10} - 8x^7 + 2}{3x - 39}$$

$$\frac{3x - 39 \neq 0}{+39 \quad +39}$$

$$3x \neq 39$$

$\mathbb{R}$  except  $x \neq 13$

Standard Form

$$-x + -y = -$$

(70) (A)  $4x + y = 10$  X

(B)  $2x + 10 = y$  X

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

(D)  $x + y = -5$  ✓

(64)  $20nCr3$   
1140

(63)  $\frac{4}{\#1} \frac{4}{\#2} 4 \cdot 4 \cdot 4$   
 $4^{10}$

$$\textcircled{65} \begin{bmatrix} -2 & 5 \end{bmatrix} \cdot \begin{bmatrix} 2 & 1 & 0 \\ -1 & 2 & 3 \end{bmatrix}$$

$$-2 \cdot 2 + 5 \cdot -1 \quad -2 \cdot 1 + 5 \cdot 2 \quad -2 \cdot 0 + 5 \cdot 3$$

$$\begin{bmatrix} -9 & 8 & 15 \end{bmatrix}$$

1-6-20 3<sup>rd</sup> Trig

⑧  $(n, 6) (n+2, 7)$

$$m = \frac{\Delta y}{\Delta x} = \frac{7-6}{n+2-n} = \frac{1}{2}$$

②⑤  $\begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix} \cdot \begin{bmatrix} 3 & -2 \\ -1 & -4 \end{bmatrix}$

$$2 \cdot 3 + 3 \cdot -1$$

$$2 \cdot -2 + 3 \cdot -4$$

$$2 \cdot 3 + 4 \cdot -1$$

$$2 \cdot -2 + 4 \cdot -4$$

$$\begin{bmatrix} 3 & -16 \\ 2 & -20 \end{bmatrix}$$

⑥⑨  $f(x) = \frac{x^{10} - 8x^7 + 2}{3x - 39}$

$$3x - 39 \neq 0$$

$\mathbb{R}$  except  $x \neq 13$

⑥②  $\underline{36} \quad \underline{36} \quad \underline{36} =$

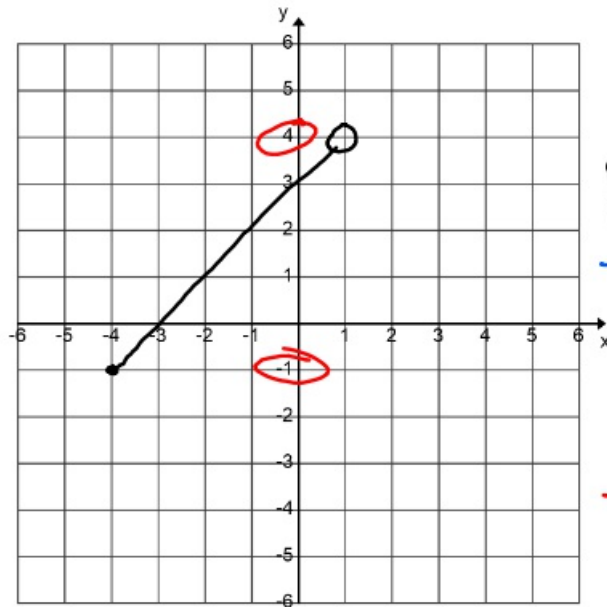
⑥③  $\underline{4} \cdot \underline{4} \cdot \underline{4} \cdot \underline{4} \dots = 4^{10}$

⑥④  $20 nCr 3 = 1,140$

$$\textcircled{57} \frac{76!}{74! \cdot 3!}$$

$$\frac{\cancel{76 \cdot 75 \cdot 74 \cdot \dots \cdot 2 \cdot 1}}{\cancel{74 \cdot 73 \cdot \dots \cdot 2 \cdot 1} \cdot 3 \cdot 2 \cdot 1}$$

$$\frac{76 \cdot 75}{6} = 950$$



Domain

$$-4 \leq x < 1$$

Range

$$-1 \leq y < 4$$

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

$$3x - 5 = 2x - 1$$

$$x = 4$$

$$y = 3(4) - 5 = 7$$

10) Standard Form

$$\_ x + \_ y = \_$$

(A)  $3x - y = 5$  ✓

(B)  $4x + y = -3$  ✓

(C)  $2x + y = 9$  ✗

$$\textcircled{14} \perp \text{ to } y = -2x + 4 \quad (4, 1)$$

$$m = -2$$

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

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

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

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

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



1-6-20 4<sup>th</sup> Trig

(12)  $(1, 4)$   $(3, 10)$   
 $x_1, y_1$

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

$$y - 4 = 3(x - 1)$$

$$\begin{array}{r} y - 4 = 3x - 3 \\ +4 \quad \quad +4 \\ \hline y = 3x + 1 \end{array}$$

$$\begin{aligned} m &= \frac{\Delta y}{\Delta x} \\ &= \frac{10 - 4}{3 - 1} \\ &= \frac{6}{2} \\ &= 3 \end{aligned}$$

(46) Girls

$${}_{10}nCr2$$

$$45 \quad x$$

Boys

$${}_{8}nCr3$$

$$56$$

$$2520$$

(68)  $h(x) = 2x^3$

$$h(h(h(x)))$$

$$h(h(2x^3)) =$$

$$h(16x^9) = 2 \cdot (16x^9)^3$$

$$2 \cdot 16x^9 \cdot 16x^9 \cdot 16x^9$$

$$8192x^{27}$$

$$2x^3 \cdot 2x^3 \cdot 2x^3$$

$$2xxx \cdot 2xxx \cdot 2xxx$$

$$h(2x^3) = 2 \cdot (2x^3)^3$$

$$2 \cdot 8x^9$$

$$16x^9$$

(65)

$$\begin{bmatrix} -2 & 5 \end{bmatrix} \cdot \begin{bmatrix} 2 & 1 & 0 \\ -1 & 2 & 3 \end{bmatrix}$$

$$-2 \cdot 2 + 5 \cdot -1$$

$$-2 \cdot 1 + 5 \cdot 2$$

$$-2 \cdot 0 + 5 \cdot 3$$

$$\begin{bmatrix} 9 & 8 & 15 \end{bmatrix}$$

$$\textcircled{69} \quad f(x) = \frac{x^{10} - 8x^2 + 2}{3x - 39} \neq 0$$

$\mathbb{R}$  except  $x \neq 13$

$$\textcircled{62} \quad \underline{36} \cdot \underline{36} \cdot \underline{36} = 46,656$$

$$\textcircled{48} \quad 2x - 4y = 10$$

To find slope, get  $y$  by itself.

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

$$\frac{-4y = -2x + 10}{-4} \quad \frac{-2x + 10}{-4}$$

$$y = \frac{1}{2}x - 2.5$$

↑  
 $m = \frac{1}{2} \therefore \perp m = -2$

$$\textcircled{63} \quad \frac{4}{\#1} \frac{4}{\#2} \frac{4}{\#3} \frac{4}{\#4} \dots \frac{4}{\#10} = 4^{10}$$

$$\textcircled{20} \quad \begin{cases} y = 3x - 1 \\ y + x = 15 \end{cases}$$

$$3x - 1 + x = 15$$

$$4x - 1 = 15$$

$$\begin{array}{r} 4x - 1 = 15 \\ +1 \quad +1 \\ \hline 4x = 16 \end{array}$$

$$4x = 16$$

$$x = 4$$

$$y = 3(4) - 1$$

$$y = 11$$

$$(72) \sum_{n=-10}^{-8} 2n-1$$

$$n=-10 \quad 2(-10)-1 = -21$$

$$n=-9 \quad 2(-9)-1 = -19$$

$$n=-8 \quad 2(-8)-1 = -17$$


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$$-57$$

$$(66) f(x) = 4x-5$$

$$f(f(x)) =$$

$$f(4x-5) = 4 \cdot (4x-5) - 5$$

$$16x-20-5$$

$$16x-25$$

$$(55) \sum_{n=2}^4 (2^n - 10)^n$$

$$n=2 \quad (2^2 - 10)^2 = 36$$

$$n=3 \quad (2^3 - 10)^3 = -8$$

$$n=4 \quad (2^4 - 10)^4 = 1296$$


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$$1324$$

$$(42) \frac{82}{\text{Pres.}} \cdot \frac{81}{\text{V.P.}} \cdot \frac{80}{\text{Sec.}} = 531,360$$

$$(56) \frac{96!}{94! \cdot 4!}$$

$$\frac{96 \cdot 95 \cdot 94 \cdot \dots \cdot 2 \cdot 1}{94 \cdot 93 \cdot \dots \cdot 2 \cdot 1 \quad 4 \cdot 3 \cdot 2 \cdot 1}$$

$$\frac{96 \cdot 95}{24} = 380$$