

10-13-17 5<sup>th</sup> Geo

## Point Slope Formula

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

- ① Give eq. in SIF of the line that has a slope of 4 and goes through (2, 7).

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

$$y - 7 = 4(x - 2)$$

$$\begin{array}{r} y - 7 = 4x - 8 \\ +7 \qquad \qquad +7 \end{array}$$

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$$y = 4x - 1$$

- ② Give eq. in SIF that is parallel to  $y = 3x - 10$  and goes through (5, 9).

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

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$$y - 9 = 3(x - 5)$$

$$\begin{array}{r} y - 9 = 3x - 15 \\ +9 \qquad \qquad +9 \end{array}$$

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$$y = 3x - 6$$

③ Give eq. in SIF that goes through (2, 4) and (6, 20).

$$m = \frac{\Delta y}{\Delta x} \\ = \frac{20-4}{6-2} = \frac{16}{4} \\ = 4$$

$$y - y_1 = m(x - x_1) \\ y - 4 = 4(x - 2) \\ y - 4 = 4x - 8 \\ \begin{array}{r} y - 4 = 4x - 8 \\ +4 \qquad \qquad +4 \\ \hline y = 4x - 4 \end{array}$$

④ Give eq. in SIF that is  $\perp$  to  $y = 2x + 3$  and goes through (4, 18).

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

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

$$y - 18 = -\frac{1}{2}(x - 4)$$

$$y - 18 = -\frac{1}{2}x + 2 \\ \begin{array}{r} y - 18 = -\frac{1}{2}x + 2 \\ +18 \qquad \qquad +18 \\ \hline y = -\frac{1}{2}x + 20 \end{array}$$

$$y = -\frac{1}{2}x + 20$$

10-13-17 6<sup>th</sup> Geo

Point Slope

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

- ① Give the eq. in SIF that goes through  $(2, 8)$  and has a slope of  $-3$ .

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

$$y - 8 = -3(x - 2)$$

$$\begin{array}{r} y - 8 = -3x + 6 \\ +8 \qquad \qquad +8 \\ \hline \end{array}$$

$$y = -3x + 14$$

- ② Give the eq. in SIF that goes through  $(2, 4)$  and is parallel to  $y = \frac{1}{2}x - 7$ .

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

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

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

$$y = \frac{1}{2}x + 3$$

③ Give the eq. in SIF that goes through  $(1, 5)$  and  $(3, 17)$ .

$x_1, y_1$

$$m = \frac{\Delta y}{\Delta x} = \frac{17-5}{3-1}$$

$$\frac{12}{2}$$

$$\textcircled{6}$$

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

$$y - 5 = 6(x - 1)$$

$$y - 5 = 6x - 6$$

$$\begin{array}{r} +5 \\ \hline y = 6x - 1 \end{array}$$

④ Give the eq. in SIF that goes through  $(2, 6)$  and is

$\perp$  to  $y = 2x - 5$ .

$$m = 2$$

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

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

$$y - 6 = -\frac{1}{2}(x - 2)$$

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

$$\begin{array}{r} +6 \\ \hline y = -\frac{1}{2}x + 7 \end{array}$$

