

May 22nd p. 418 Point-Slope Cont'd

29. ^{x_1, y_1}
 $(1, 5)$

$$m = 1$$

$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{1(x-1)}{1(x-1)} = \frac{y-5}{x-1}$$

$$y - 5 = x - 1$$
$$0 = x - y + 4$$

$$y + 5 = x + 1$$

$$y = x + 4$$

x	y
-2	2
2	6

$$\begin{pmatrix} x_1 & y_1 \\ x_2 & y_2 \end{pmatrix} = \begin{pmatrix} -2 & 2 \\ 2 & 6 \end{pmatrix}$$

$$m = \frac{\Delta y}{\Delta x}$$

$$m = \frac{6 - 2}{2 - (-2)}$$

$$= \frac{y_2 - y_1}{x_2 - x_1} = \frac{6 - 2}{2 - (-2)} = \frac{4}{4} = 1$$

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A(3,4)

x_1, y_1

B(4,6)

x_2, y_2

Point Slope

$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{6 - 4}{4 - 3} = 2$$

$$m = 2$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$2(x-3) = y-4$$

$$\cancel{1(x-3)} \quad \cancel{x-3}$$

$$2(x-3) = y-4$$

$$2x - 6^{+4} = y - 4^{+4}$$

$$2x - 6 + 4 = y$$

$$2x - 2 = y$$

$$2x - 2 - y = 0$$

$$2x - y - 2 = 0$$

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$$(\overset{x}{8}, \overset{y}{-7}) \quad (\overset{x}{-6}, \overset{y}{-7})$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{-7 - (-7)}{-6 - 8}$$

$$= \frac{0}{-14}$$

$$m = 0$$

$$0 = y - (-7)$$

$$x - 8$$

$$0 = y + 7$$

$$1(y + 7) = 0(x - 8)$$

$$y + 7 = 0$$

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$$(x_1, y_1) = (0.3, 0.4)$$

$$(x_2, y_2) = (0.5, 0.7)$$

$$m = \frac{\Delta y}{\Delta x}$$

$$= \frac{y_2 - y_1}{x_2 - x_1} = \frac{0.7 - 0.4}{0.5 - 0.3} = \frac{0.3}{0.2} = 1.5$$

$$0.3 = \frac{y_2 - y_1}{x_2 - x_1} = \frac{y - 0.4}{x - 0.3}$$

$$\begin{aligned} \frac{0.3}{0.2} &= \frac{y - 0.4}{x - 0.3} \\ 0.2(y - 0.4) &= (x - 0.3)0.3 \end{aligned}$$

CONT

$$0.2(y - 0.4) = 0.3(x - 0.3)$$

$$\rightarrow 0.2y - 0.08 = 0.3x - 0.09$$

LHS

RHS

$$\rightarrow -0.08 = 0.3x - 0.2y - 0.09$$

$$0 = 0.3x - 0.2y - 0.01$$

45) $\left(\frac{2}{3}, \frac{1}{4}\right)$ $\left(\frac{1}{3}, \frac{1}{3}\right)$
 x_1 y_1 x_2 y_2

$$m = \frac{dy}{dx} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\frac{1}{3} - \frac{1}{4}}{\frac{1}{3} - \frac{2}{3}} = \frac{\frac{4}{12} - \frac{3}{12}}{\frac{1}{3} - \frac{2}{3}}$$

$$\rightarrow = \frac{\frac{1}{12}}{-\frac{1}{3}} = \frac{1}{12} \div \frac{-1}{3} = \frac{1}{12} \times \frac{3}{-1} = \frac{3}{-12} = \frac{1}{-4}$$

$$m = -\frac{1}{4}$$

$$A\left(\frac{2}{3}, \frac{1}{4}\right)$$

x_1, x_2

CONT FROM PREVIOUS

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{-1}{4} = \frac{y - \frac{1}{4}}{x - \frac{2}{3}}$$

$$x + 4y - 1 \stackrel{\times 3}{=} -\frac{2}{3} = 0$$

$$x + 4y - \frac{5}{3} = 0$$

$$4\left(y - \frac{1}{4}\right) = -1\left(x - \frac{2}{3}\right)$$

$$4y - 1 = -x + \frac{2}{3}$$

HOMEWORK

3rd Box 30 to 48