Slope from 2 points

Formula $\frac{y_2 - y_1}{x_2 - x_1}$

opposite reciprocal Change the sign and flip the fraction

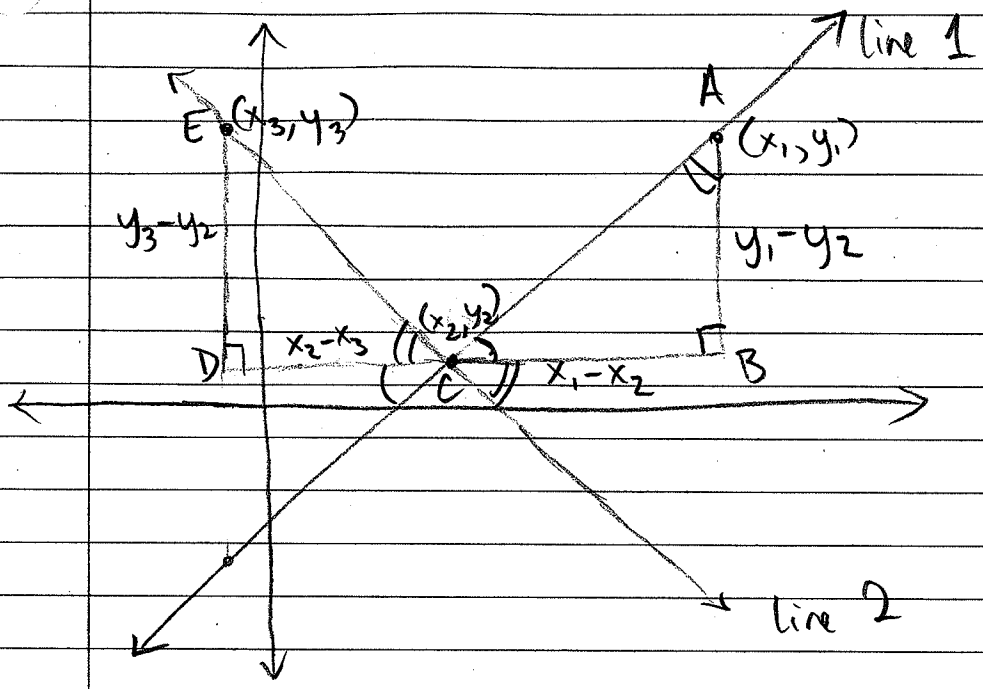
Example $\frac{6}{7}$ $-\frac{7}{6}$ $\frac{6}{1}$ $-\frac{1}{6}$

$\frac{3}{4}$ $-\frac{4}{3}$

Perpendicular line ⊥ lines have slopes that are opposite reciprocals

⊥

Example find the slope (rate of change) of



$\triangle ABC \sim \triangle CDE$, so

$$\frac{y_1 - y_2}{x_1 - x_2} = \frac{x_2 - x_3}{y_3 - y_2}$$

↑ slope of line 1

slope of line 2 $= \frac{y_3 - y_2}{x_3 - x_2}$

reciprocal of slope of line 2 $= \frac{x_3 - x_2}{y_3 - y_2}$

opposite of that $= \frac{x_2 - x_3}{y_3 - y_2}$

SLOPES OF $\perp$ LINES ARE OPP. RECIPROCALS

Example: What is the slope of a line $\perp$ to the line through (3,5) and (1,9)?

(etc.)