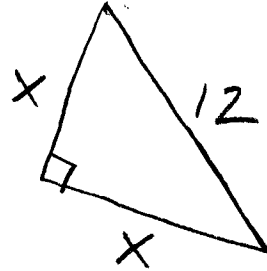
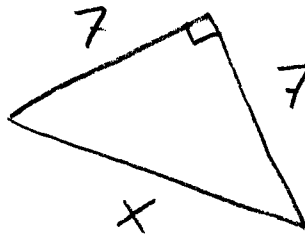


BE - Geometry I | Thursday 9-23-10

① Find X:



② Find X:



① $x^2 + x^2 = 12^2$

$$2x^2 = 144$$

$$x^2 = 72$$

$$\therefore x = \sqrt{36} \sqrt{2}$$

$$\boxed{x = 6\sqrt{2}}$$

$$\approx 8.485281374\dots$$

② $7^2 + 7^2 = x^2$

$$49 + 49 = x^2$$

$$x = \sqrt{98} = \sqrt{49} \sqrt{2} = \boxed{7\sqrt{2}}$$

$$\approx 9.899494937\dots$$

Ch. 3-3 Slopes of Lines

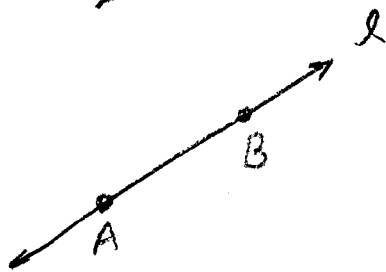
Naming Points Example $A(-2, -5)$

$B(4, 7)$

$C(0, 2)$

$D(8, -2)$

Naming Lines Example



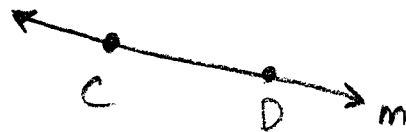
line AB

line l

\overleftrightarrow{AB}

\overleftrightarrow{BA}

line BA



line CD

line m

\overleftrightarrow{CD}

\overleftrightarrow{DC}

line DC

EX 3A
PG 141

Find slopes of \overleftrightarrow{AB} , \overleftrightarrow{CD} . State whether \parallel , \perp , or diagonal

$A(-2, -5), B(4, 7)$

$$m = \frac{7 - (-5)}{4 - (-2)} = \frac{12}{6} = 2 = m$$

$C(0, 2), D(8, -2)$

$$m = \frac{-2 - 2}{8 - 0} = \frac{-4}{8} = -\frac{1}{2} = m$$

∴ LINES ARE PERPENDICULAR Because slopes are opposite, reciprocals

POSTULATES \Rightarrow Ch. 3

3-2 Two non-vertical lines have the same slope iFF they are parallel.
(if and only if)

3-2 Two non-vertical lines are perpendicular iFF the products of their slopes is -1 .

(ex) $\frac{2}{1} \cdot -\frac{1}{2} = -1$

opposite reciprocals

(ex 3b pg 111)

$A(-8, -7), B(4, -4), C(-2, -5), D(1, 7)$
are $\overleftrightarrow{AB}, \overleftrightarrow{CD}$ \parallel, \perp , or diagonal?

$A(-8, -7), B(4, -4)$ $m = \frac{-4 + 7}{4 + 8} = \frac{3}{12} = \frac{1}{4} = m$

$C(-2, -5), D(1, 7)$ $m = \frac{7 + 5}{1 + 2} = \frac{12}{3} = 4 = m$

LINES ARE DIAGONAL

Because they are NOT \parallel or \perp

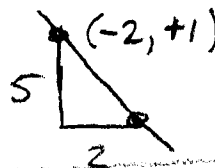
EX4
pg 141

WITHOUT using or finding the new equation of a line, graph the line that contains $P(-2, 1)$ and is perpendicular to \overleftrightarrow{JK} if $J(-5, -4)$, $K(0, -2)$

Slope of \overleftrightarrow{JK}

$$J(-5, -4), K(0, -2) \quad m = \frac{-2 + 4}{0 + 5} = \frac{2}{5}$$

Start at $P(-2, 1)$ and "MOVE" $\therefore m_{\perp} = -\frac{5}{2}$



Now Find the EOL

$$\begin{array}{l} (-2, +1) \quad m_{\perp} = -\frac{5}{2} \\ x, y \end{array}$$

$$y = mx + b$$

$$+1 = -\frac{5}{2} \cdot -2 + b$$

$$+1 = 5 + b$$

$$-4 = b \quad \therefore \boxed{y = -\frac{5}{2}x - 4}$$

• IOW \Rightarrow Q1 HW 6