L3 Geometry Mid-year Review

Chapter 3

Name KEY

Date

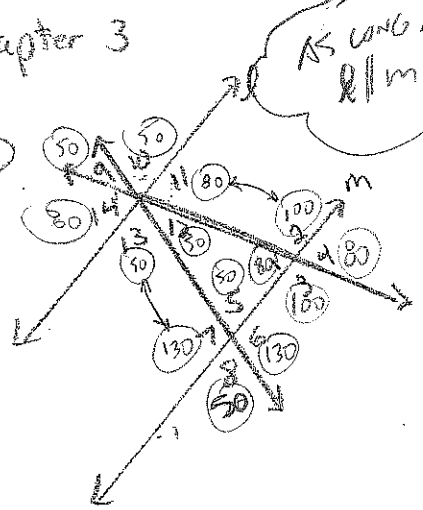
① As long as $\ell \parallel m$

$\ell \parallel m$

$\angle 8 = 50$

$\angle 2 = 100$

Find the missing angle measures.



$\angle 1$	80	$\angle 6$	130	$\angle 11$	80
$\angle 3$	100	$\angle 7$	130	$\angle 12$	50
$\angle 4$	80	$\angle 9$	50	$\angle 13$	50
$\angle 5$	50	$\angle 10$	50	$\angle 14$	80

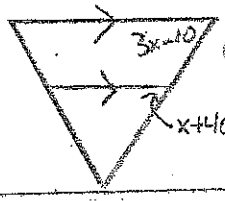
② Find x

$x + x - 50 = 180$

$2x = 230$

$x = 115$

③ Find x



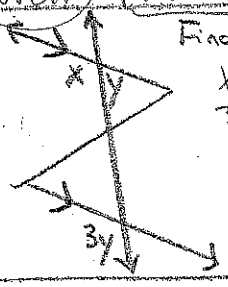
$3x - 10 = x + 40$

$2x = 50$

$x = 25$

* TOUGH SUBSTITUTION

④ Find x and y



$x = 3y$

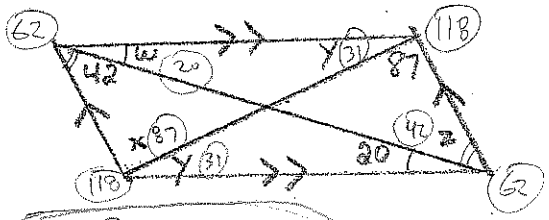
$3y + y = 180$

$4y = 180$

$y = 45$

$x = 135$

⑤ Find w, x, y, and z



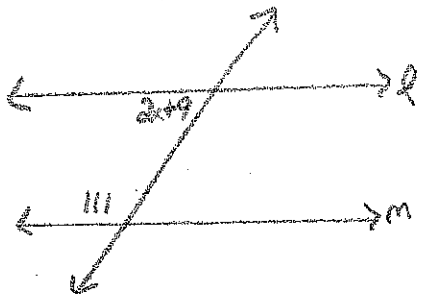
$w = 20$

$x = 87$

$y = 31$

$z = 42$

⑥ What must the value of x be to ensure $\ell \parallel m$



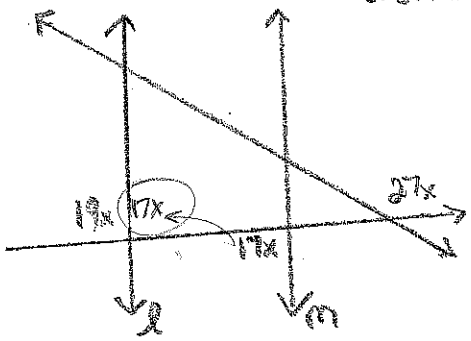
$2x + 9 + 111 = 180$

$2x + 120 = 180$

$2x = 60$

$x = 30$

⑦ What must the value of x be to ensure $\ell \parallel m$.

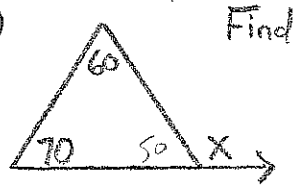


$19x + 17x = 180$

$36x = 180$

$x = 5$

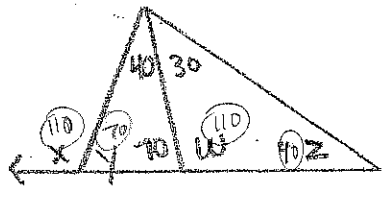
⑧ Find x



$x = 60 + 70$

$x = 130$

⑨ Find w, x, y, and z



$w = 110$

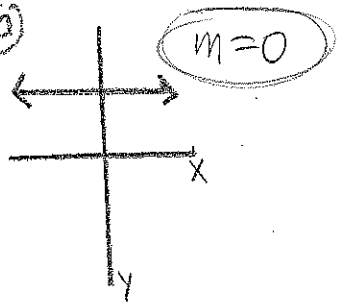
$x = 110$

$y = 70$

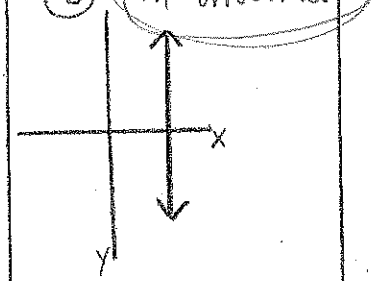
$z = 40$

(10) Find the slope of the lines

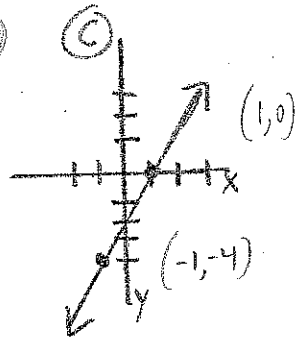
(a) $m = 0$



(b) m = undefined



(c)



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

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

(11) Find the slope of the line that passes through

(a) (5, 9) (2, 21)

$\frac{21-9}{2-5} = \frac{12}{-3} = \frac{-4}{1}$

(b) (-3, 8) (-6, 2)

$\frac{2-8}{-6-(-3)} = \frac{-6}{-3} = \frac{2}{1}$

(c) (5, 7) (5, 11)

$\frac{11-7}{5-5} = \frac{4}{0}$ = undefined

(VERTICAL LINE)

(12) Write an equation in slope-intercept form given:

(a) $m = 5$; (3, 7)

$7 = 5(3) + b$
$7 = 15 + b$
$-8 = b$

$y = 5x - 8$

SAME

$y - 7 = 5(x - 3)$
$y - 7 = 5x - 15$
$y = 5x - 8$

(2 DIFF. METHODS)

(b) (2, 6) (6, 8)

$m = \frac{8-6}{6-2} = \frac{2}{4} = \frac{1}{2}$

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

$6 = \frac{1}{2}(2) + b$
$6 = 1 + b$
$5 = b$

$y = \frac{1}{2}x + 5$

SAME

$y - 8 = \frac{1}{2}(x - 6)$
$y - 8 = \frac{1}{2}x - 3$
$y = \frac{1}{2}x + 5$

(13) Write an equation in point-slope form given:

(a) $m = 2$; (-3, 6)

$y - 6 = 2(x + 3)$

(b) (3, 5) (9, 6)

$m = \frac{6-5}{9-3} = \frac{1}{6}$

$m = \frac{1}{6}$

$y - 6 = \frac{1}{6}(x - 9)$
or
$y - 5 = \frac{1}{6}(x - 3)$

(14) Are the pairs of lines parallel, perpendicular, or neither

(a) $y = 3x - 5$
$y = \frac{1}{3}x + 4$

NEITHER

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

PARALLEL

(c) $3y = 4x + 8$
$8y + 6x = 16$
$y = \frac{4}{3}x + \frac{8}{3}$
$y = -\frac{3}{4}x + 2$

PERPENDICULAR

(d) $y - 5 = \frac{2}{3}(x + 6)$
$y = 8 - \frac{3}{2}x$
$y - 5 = \frac{2}{3}x + 4$
$y = \frac{2}{3}x + 9$
$y = -\frac{3}{2}x + 8$

PERPENDICULAR

(e) The line that passes through (5, 6) and (9, 7) and $2y + 8x = 20$

$m = \frac{7-6}{9-5} = \frac{1}{4}$

$y = -4x + 10$

PERPENDICULAR