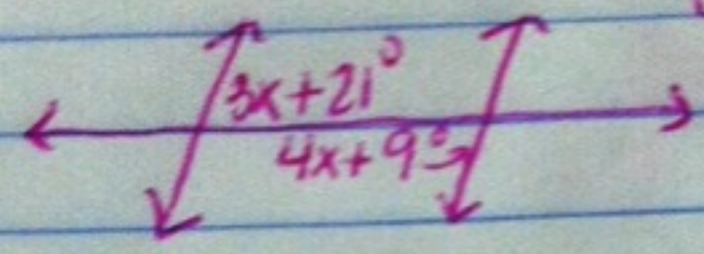
Chpt 3 Review Wksht #2 Answers

1) plane ABC ∥ plane DEF
2) AB ∥ DE (other answers may work too)
3) ED and CF (other answers may work too)

4) $3x+21 = 4x+9$



$-3x \quad -3x$

$21 = x + 9$

$-9 \quad -9$

$12 = x$

$3(12)+21 = 57°$

$4(12)+9 = 57°$

5) $26x-7 = 20x+17$

$-20 \quad -20x$

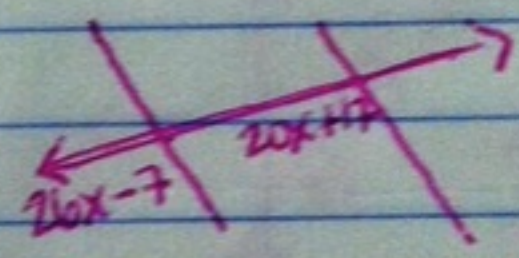
$6x-7 = 17$

$6x = 24$

$x = 4$

$26(4)-7 = 97°$

$20(4)+17 = 97°$



6) $42x-9 = 35x+12$

$-35x \quad -35x$

$7x-9 = 12$

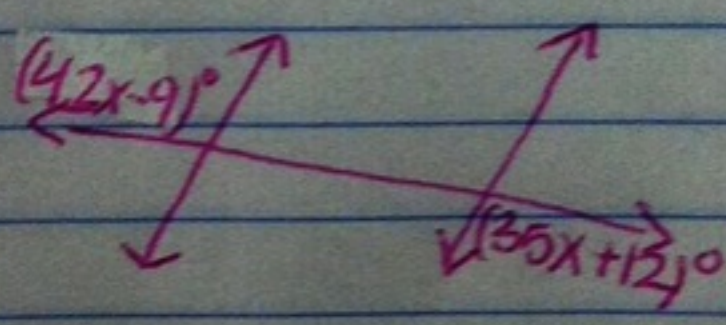
$+9 \quad +9$

$7x = 21$

$x = 3$

$42(3)-9 = 117°$

$35(3)+12 = 117°$



7) $m\angle 4 = (16x+20)$, $m\angle 5 = (12x+32)$, $x=3$ — given

$m\angle 4 = 16(3)+20$ — subst. prop =

$m\angle 4 = 68°$ — simplify

$m\angle 5 = 68°$ — def of $\cong$

$\angle 4 \cong \angle 5$ — Converse of alt int $\angle$s Thm

$t \parallel q$

8) $m\angle 3 = (18x+6)$ $m\angle 5 = (21x+18)$ $x=4$ — given

$m\angle 3 = 18(4)+6$ $m\angle 5 = 21(4)+18$ — subst. prop =

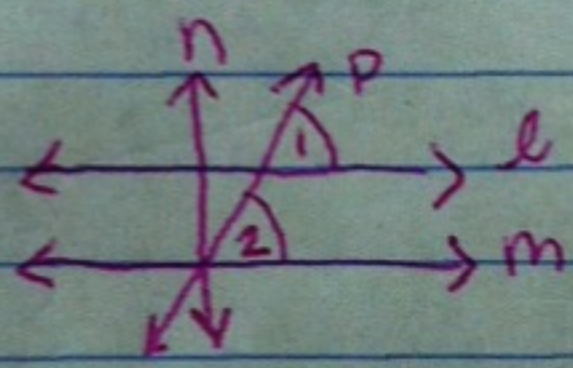
$m\angle 3 = 78°$ $m\angle 5 = 102°$ — simplify

$78° + 102° = m\angle 3 + m\angle 5 = 180$ — $\angle$ add post

$t \parallel q$ Converse of ss int $\angle$ Thm

9) Given: $\angle 1 \cong \angle 2$; $n \perp l$

Prove: $n \perp m$



Statement	Reason
1) $\angle 1 \cong \angle 2$; $n \perp l$	1) given
2) $l \parallel m$	2) Converse of corres. $\angle$ post.
3) $n \perp m$	3) $\perp$ transversal Thm

10) $(\underset{x_1}{-1}, \underset{y_1}{3})$ and $(\underset{x_2}{-3}, \underset{y_2}{-4})$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-4-3}{-3-1} = \frac{-7}{-4} = \frac{7}{4}$$

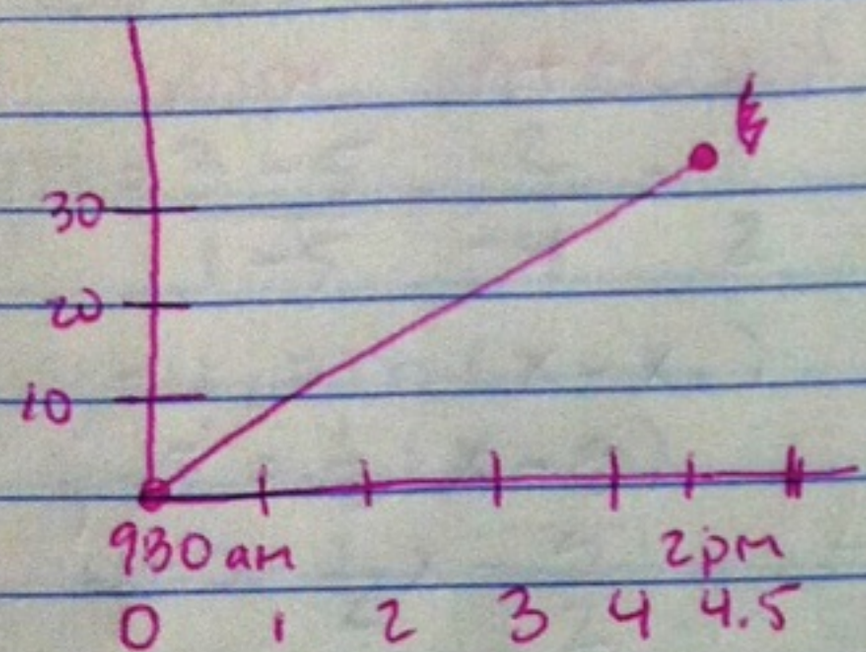
11) $(\underset{x_1}{-3}, \underset{y_1}{-1})$ and $(\underset{x_2}{2}, \underset{y_2}{-1})$

$$\frac{-1-(-1)}{2-(-3)} = \frac{-1+1}{2+3} = \frac{0}{5} = 0$$

12) $(5, 1)$ and $(0, -3)$
$x_1\ y_1$ $x_2\ y_2$

$$\frac{-3-1}{0-5} = \frac{-4}{-5} = \frac{4}{5}$$

13)



$(0, 0)$ $(4.5, 32)$
$x_1\ y_1$ $x_2\ y_2$

$\frac{32}{4.5}$ ft

14) $Q(3, 3)$ $R(6, -5)$ $S(-4, 6)$ and $T(-1, -2)$
$x_1\ y_1$ $x_2\ y_2$ $x_1\ y_1$ $x_2\ y_2$

$m\overline{QR} = \frac{-5-3}{6-3} = \frac{-8}{3}$

$m\overline{ST} = \frac{-2-6}{-1+4} = \frac{-8}{3}$

same slope so lines are $\parallel$

15) $(-2, -5)$ $m = -3/4$
$x_1\ y_1$

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

$y-(-5) = -3/4\,(x-(-2))$

$\boxed{y+5 = -3/4\,(x+2)}$

16) $6x+y=3$ $2x+3y=1$

$-6x\ \ -6x$ $\quad -2x\ \ -2x$

$y = 3-6x$ $\quad \frac{3y}{3} = \frac{1}{3} - \frac{2x}{3}$

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

different slopes so the lines intersect.

17) $-2x+30 > 20$
$\quad -30\ \ -30$

$-2x > -10$

$x < 5$

18) $(\overset{x_1}{2}, \overset{y_1}{3})$ and $(\overset{x_2}{-1}, \overset{y_2}{5})$

$$\frac{5-3}{-1-2} = \frac{2}{-3}$$

19) equ' of a line through $(\overset{x_1}{5}, \overset{y_1}{5})$ and $(\overset{x_2}{1}, \overset{y_2}{3})$ in slope intercept form.

$$m = \frac{3-5}{1-5} = \frac{-2}{-4} = \frac{1}{2}$$

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

$$y - 5 = \frac{1}{2}(x - 5)$$

$$y - 5 = \frac{1}{2}x \boxed{\begin{matrix} -\frac{5}{2} \\ +5 \end{matrix}} \quad +5$$

work →

$$-\frac{5}{2} + \frac{5 \times 2}{1 \times 2} = -\frac{5}{2} + \frac{10}{2} = \frac{5}{2}$$

$$y = \frac{1}{2}x + \frac{5}{2} \text{ or } y = \frac{1}{2}x + 2.5 \text{ or } y = \frac{1}{2}x + 2\frac{1}{2}$$