

Ch.1 Review Work In Class Notes

p.93 #14

Sara, Ivanna, Carm, Jenn

$x = \text{speed of plane}$
 $y = \text{speed of wind}$

$$\textcircled{1} x + y = \frac{600}{2} \rightarrow x + y = 300$$

$$\textcircled{2} x - y = \frac{600}{3} \rightarrow x - y = 200$$

eliminate x :

$$\textcircled{1} - \textcircled{2}$$

$$\frac{2y}{2} = \frac{100}{2}$$

$$y = 50$$

sub into $\textcircled{1}$:

$$x + 50 = 300$$

$$x = 300 - 50$$

$$x = 250$$

check: $(250, 50)$

$$\textcircled{1} \quad 250 + 50 = 300$$
$$300 = 300$$
$$LS = RS \quad \text{true}$$

$$\textcircled{2} \quad 250 - 50 = 200$$
$$200 = 200$$
$$LS = RS \quad \text{true}$$

••, the plane travels at 250 km/h
while the wind travels at 50 km/h

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Christine, Connie, Erica, Derek.

#16) let "l" be length
let "w" be width

The length is 2m longer than the width

① $40 = 2l + 2w$
② $l = 2 + w$

Ax+By=C

error format

① $-2l - 2w = -40$
② $l + w = 2$

rearrange
isolate
① $W = -11 - 2$ error
② $-2l = -40 + 2w$
 $\frac{-2l}{-2} = \frac{-40 + 2w}{-2}$

FORMAT!
 $l = -20 + 1w$

~~$l = -20 + 1w$
 $1w = -1(-20 - 1w)$
 $-w = 20 + 1w - 2$
 $1w + w = 20 - 2$
 $\frac{2w}{2} = \frac{18}{2}$
 $w = 9$~~

Sub $w=9$ in ①

~~$-2l - 2(9) = -40$
 $2l - 18 = -40$
 $-2l = -40 + 18$
 $-2l = -22$
 $\frac{-2l}{-2} = \frac{-22}{-2}$
 $l = 11$~~

Check

① LS | RS LS | RS
 $-2(11) - 2(9) = -40$ $1(11) - 9 = 2$
 $-22 - 18$ $11 - 9$
 -40 $= 2$ ✓
true true LS=RS

Therefore, $(11, 9)$ is the solution to the problem.
length = 11m
width = 9m

① $40 = 2l + 2w$
② $l = 2 + w$

sub ② into ①

$40 = 2(2+w) + 2w$
 $40 = 4 + 2w + 2w$
 $40 - 4 = 4w$
 $36 = 4w$
 $w = 9$

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$$\textcircled{1} y = 40x + 1250$$

$$\textcircled{2} y = 60x$$

sub $\textcircled{2}$ into $\textcircled{1}$

$$60x = 40x + 1250$$

$$60x - 40x = 1250$$

$$20x = 1250$$

$$x = \frac{1250}{20}$$

$$x = 62.5$$

sub in $x = 62.5$ to solve for "y."

$$y = 60x$$

$$y = 60(62.5)$$

$$y = 3750$$

CHECK (62.5, 3750)

$$y = 40x + 1250 \text{ so}$$

$$3750 = 40(62.5) + 1250$$

$$3750 = 2500 + 1250$$

$$3750 = 3750$$

$$L5 = R5$$

\therefore the business must sell 62.5 or 63
air filters to break even.

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1.9 #14

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Step 1: $x + y = 300$ let "x" represent the number of chicken dishes
 $16x + 18y = 5256$ let "y" represent the number of beef dishes.

Step 2: ~~$x + y = 300$
 $16x + 18y = 5256$
 $-16x - 18y = -4800$
 $0 = -456$
 $y = 228$~~
 $16x + 16y = 4800$
 $16x + 18y = 5256$
 $0 - 2y = -456$
 $y = 228$

Step 3: $2x + 228 = 300$
 $x = 300 - 228$
 $x = 72$
Sub $y = 228$ into ①

Check (72, 228)
Step 4: Ls Rs ② Ls Rs
 $72 + 228 = 300$ $16(72) + 18(228) = 5256$
 $300 = 300$ $1152 + 4104 = 5256$
true $5256 = 5256$
true

Therefore there will be 72 chicken dishes and 228 beef dishes.

Let "x" represent = Savings
 Let "y" represent = Chequings
 end

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$$\begin{aligned} \textcircled{1} \quad & 0.04x + 0.02y = 27 \\ \textcircled{2} \quad & x + y = 750 \end{aligned}$$

$$\textcircled{2} \quad y = 750 - x$$

$$\begin{aligned} \textcircled{1} \quad & 0.04x + 0.02(750 - x) = 27 \\ & 0.04x + 15 - 0.02x = 27 \\ & 0.04x + -0.02x = 27 - 15 \\ & \cancel{0.02}x = 12 \\ & \frac{0.02}{0.02} \end{aligned}$$

$$[x = 600]$$

$$\begin{aligned} \textcircled{2} \quad & 600 + y = 750 \\ & y = 750 - 600 \\ & [y = 150] \end{aligned}$$

SUBSTITUTION

let "x" represent dollar amount deposited into savings acct.

let "y" represent dollar amount deposited into chequing acct.

(600, 150)

∴ 600 dollars was put into the savings and 150 dollars was put into chequings

BY: DANIEL, ADRIAN, AND ALESSANDRO N.

Check before conclusions → VERIFY (600, 150)?

$$\begin{aligned} \textcircled{1} \quad & \text{LS} \\ & = 0.04(600) + 0.02(150) \\ & = 24 + 3 \\ & = 27 \end{aligned}$$

LS = RS
true

$$\begin{aligned} \textcircled{2} \quad & \text{LS} \quad \text{RS} \\ & = 600 + 150 = 750 \\ & = 750 \end{aligned}$$

LS = RS
true

Mariani, Nofle
Samantha, Zack

prob #17

(S1) $\textcircled{1} x + y = 12.5$
 $\textcircled{2} 16x + 10y = 160$

let "x" represent the surface speed
let "y" represent the underwater speed.

time in hours

(S2) $10(x + y = 12.5) \leftarrow \textcircled{1} \times 10$

$\textcircled{1} 10x + 10y = 125$
 $\textcircled{2} 6x + 10y = 160$
 $\textcircled{1} - \textcircled{2} \quad -4x = -35$
 $\frac{-4x}{-4} = \frac{-35}{-4}$
 $x = 8.75$ } format!

(S3) $16(8.75) + 10y = 160 \leftarrow \text{sub } x = 8.75 \text{ into } \textcircled{2}$

$140 + 10y = 160$
 $10y = 160 - 140$
 $10y = 20$

Check (8.75, 2) $y = 2$

(S4) $\textcircled{1} x + y = 12.5$ $\textcircled{2} 16x + 10y = 160$

LS	RS	LS	RS
$= 8.75 + 2$	$= 12.5$	$= 16(8.75) + 10(2)$	$= 160$
$= 12.5$		$= 140 + 20$	
LS = RS		$= 160$	
✓			
time			

LS = RS ✓ time

(S5) ∴ The submarine was underwater for 2 hours.