Exam 2c

ASSIGNMENT

Pg. 4, 7, 13, 15, 17

#4

Let x be the money invested at 7% p.a in dollars (½c) ✓

Let y " " " " " 6% p.a in dollars.

✓ ① $x + y = 2050 \Rightarrow 7x + 7y = 14350$

✓ ② $0.07x + 0.06y = 135 \Rightarrow 7x + 6y = 13500$

$y = 550$ ✓

Sub $550 = y$ into ①

$x + 550 = 2050$

$x = 1500$ ✓

∴ $1500 is invested at 7% p.a. and $550 is invested at 6% p.a. (½c)

~~T=5~~ C=1

$\frac{2}{.28}$
$\frac{30}{8.4}$

9 #7 Let x be the amt of 20% sulphuric acid required in litres. (½ C)
Let y " " " " 50% " " " "

✓ ① $x + y = 30 \Rightarrow 2x + 2y = 60$

✓ ② $0.2x + 0.5y = 0.28(30) \Rightarrow 2x + 5y = 84$

$-3y = -24$

$y = 8$ ✓✓

Sub $y = 8$ into ①

$x + 8 = 30$

$x = 22$. ✓

∴ 22 L of 20% solution + 8 L of 50% solution are required. (½ C)

T = 5 C = 1

13.

Let m be the cost of a meal in dollars
Let d be the cost for a days accomodation in dollars. (½c)

① $21m + 7d = 875$ ✓
② $14m + 7d = 770$ ✓

$7m = 105$
$m = 15$ ✓

Sub $m = 15$ into ①

$21(15) + 7d = 875$
$315 + 7d = 875$
$7d = 560$
$d = 80$ ✓

∴ The cost/meal is $15, and the cost/day for accomodation is $80. (½c)

$T = 5$ $C = 1$

#15

Let w be the wind speed in km/h. (½c)

Let p be the avg speed of the plane in km/h.

① $3(p+w) = 1800 \Rightarrow 3p+3w = 1800$ ✓

② $4(p-w) = 1800 \Rightarrow 4p-4w = 1800$ ✓

① ×4 $\quad 12p+12w = 7200$

② ×3 $\quad 12p-12w = 5400$

$24w = 1800$

$w = 75$ ✓✓

Sub $w=75$ into ①

$3p + 3(75) = 1800$

$3p + 225 = 1800$

$3p = 1575$

$p = 525$ ✓

∴ the wind speed was 75 km/h & the plane's speed was 525 km/h (−½c)

T = 5 C = 1

#17 Let j be the speed Bob jogged at in km/h. (½ c)

Let w be the speed Bob walked at in km/h.

① $2j + 3w = 31$ ✓

② $3j + 2w = 34$ ✓

① × 3 $\quad 6j + 9w = 93$

② × 2 $\quad 6j + 4w = 68$

$5w = 25$

$w = 5$ ✓

Sub $w = 5$ into ①

$2j + 3(5) = 31$

$2j = 16$

$j = 8$ ✓

∴ He jogged at 8 km/h and walked at 5 km/h. (½ c)

T-5 C=1