ASSIGNMENT # 2

Section 3.1

(A1) a) $\frac{12}{32} = \frac{3}{8}$ 3:8 b) $\frac{84}{56} = \frac{3}{2}$ 3:2

(2a) $\frac{120}{125} = \frac{24}{25}$ 24:25 b) $\frac{15}{72} = \frac{5}{24}$ 5:24

(3b) $\frac{2.4}{8.4} = \frac{2}{7}$ 2:7 f) $\frac{5/3}{7/5} = \frac{25}{21}$ 25:21

(7) $\frac{5\frac{1}{4}}{5\frac{5}{6}} = \frac{9}{10}$ 9:10

(B2) 2500 : 87500 $\frac{2500}{87500} = \frac{1}{35}$ 1:35

(4) 4.25 : 2.75 : 3.25

17 : 11 : 13

(6) 20 : 45 : 5

4 : 9 : 1

(2)

Total $m^2 = 1000 + 600 + 800 + 400$

$= 2800\ m^2$

Allocation:

A: $\frac{1000}{2800}(21000) = \$7500$

B: $\frac{600}{2800}(21000) = \$45000$

C: $\frac{800}{2800}(21000) = \$6000$

D: $\frac{400}{2800}(21000) = \$3000$

(4)

Total # millions $= 10.8 + 8.4 + 14.4 = 33.6$

Northern div. $\frac{10.8}{33.6}(588000) = \$189000$

East. div. $\frac{8.4}{33.6}(588000) = \$147000$

West. div $\frac{14.4}{33.6}(588000) = \$252000$

(6)

$\frac{1}{8} : \frac{1}{4} : \frac{1}{2} : \frac{1}{16}$, LCD = 16

2 : 4 : 8 : 1 # of parts $= 2+4+8+1 = 15$

Allocation:

$\frac{2}{15}(480000) = \$64000$

$\frac{4}{15}(480000) = \$128000$

$\frac{8}{15}(480000) = \$256000$

$\frac{1}{15}(480000) = \$32000$

Section 3.2:

(A2) $\frac{n}{7} = \frac{24}{42}$

$n = 4$

(6) $\frac{2.17}{1.61} = \frac{K}{4.6}$

$K = 6.2$

(10) $\frac{3/4}{t} = \frac{5/8}{4/9}$

$t = 8/15$

(B2) $\frac{28}{1000} = \frac{854}{x}$

$x = \$30\,500$

(6) $\frac{1}{3} = \frac{1300}{\text{Total value}}$

Total value of damaged sell $= 3900$

b) $\frac{3}{8} = \frac{3900}{\text{Total value}}$

Total value $= 10\,400$

a) $\frac{5}{8}(10\,400) = 6500$

∴ the amount loss by the fire is $\$6500$

(8) $\frac{\text{Material Cost}}{\text{Total Cost}} = \frac{5}{8}$

$\frac{\text{Labour Cost}}{\text{Material Cost}} = \frac{1}{3}$

$\frac{15}{\text{Material Cost}} = \frac{1}{3}$

Material Cost $= 45$

$\frac{45}{\text{Total Cost}} = \frac{5}{8}$

Total Cost $= \$72$

Section 3.3

(A2) Percentage = base × rate
$= 950(0.001)$
$= 0.95$

(6) Percentage = base × rate
$= 240(0.15)$
$= 36$

(10) Percentage = base × rate
$= 500(0.005)$
$= 2.5$

(B2) Percentage = base × rate
$= 400(1.375)$
$= 550$

(6) Percentage = base × rate
$= 1600(1.75)$
$= \$2800$

(10) Percentage = base × rate
$= 90 \times (1.6\overline{6})$
$= \$150.00$

(C2) Percentage = base × rate

$$\text{rate} = \frac{\text{Percentage}}{\text{base}}$$

$$= \frac{54}{72}$$

$= 75\%$

(6) $$\text{rate} = \frac{\text{Percentage}}{\text{base}}$$

$$= \frac{11}{440}$$

$= 2.5\%$

(10) $$\text{rate} = \frac{39}{18}$$

$= 216\frac{2}{3}\%$

(12)

$$\text{rate} = \frac{36}{15}$$

$$= 240\%$$

(6) $\text{Percentage} = \text{Rate} \times \text{Base}$

$$300 = 2.5 \times \text{Base}$$

$$\text{Base} = \frac{300}{2.5}$$

$$= 120$$

(10) $\frac{180}{450} = \text{rate}$

$\text{rate} = 40\%$

(E2) $\text{Labour} = 37\frac{1}{2}\%\ (\text{Total Cost})$

$= 0.375\ (72)$

$= 27$

(6) $\text{Percentage} = \text{Rate} \times \text{Base}$

$\text{Deduction} = \text{Rate} \times \text{Gross Salary}$

$53.46 = (0.04945)(\text{Gross Salary})$

$\text{Gross salary} = 1080$

(10) $\text{rate} = \frac{\text{Percentage}}{\text{Base}}$

$= \frac{18}{45}$

$= 40\%$

Section 1.5

(A2) a) She will get $\frac{52}{2} = 26$ pays

$\therefore \frac{23\,868.00}{26} = \$918$

is her regular gross pay

(b) rate $/hr $= \frac{918}{2(37.5)} = \$12.24/hr$

since she gets $918 every two weeks.

(c) regular gross pay $+ 12.24\left(\frac{3}{2}\right)(8.5)$

$= 918 + 12.24\left(\frac{3}{2}\right)(8.5) =$

$= \$1074.06$

(8) Net sales $= 24\,250 - 855 = 23\,395$

Comission $= 10000(4.5\%) + 5000(6\%) + 8395(8\%)$

$= \$1421.60$

(14) amount of Salary from Commission $= 337.50 - 264.00$

$= 73.5$

Commission = rate × (Sales minus quota)

$73.5 = (0.0875) \times$ (Sales minus quota)

$\$840.00 =$ Sales minus quota

$\therefore$ Sales $= 840.00 +$ quota

$= 840 + 4800$

$= \$5640$.

(16)

Monday	$7\frac{1}{2}$
Tuesday	9
Wednesday	$7\frac{1}{2}$
Thursday	$10\frac{1}{2}$
Friday	$7\frac{1}{2}$
Saturday	6

Method A:

$$7\tfrac{1}{2}(5)(10.60) + 2(6)(10.60) + \left(\tfrac{3}{2}\right)(4.5)(10.60)$$

$$= \$\ 596.25$$

Method B:

$$(7\tfrac{1}{2} + 9 + 7\tfrac{1}{2} + 10\tfrac{1}{2} + 7\tfrac{1}{2} + 6)(10.60) + (4.5)(0.5)(10.60) + \text{dix}(10.60)$$

$$= \$\ 596.25$$

(18) $361 = \text{wage}(40) + \text{wage}\left(\frac{3}{2}\right)(5)$

$361 = \text{wage}(40) + \frac{15}{2}\text{wage}$

$361 = \frac{95}{2}\text{wage}$

$\$7.60/\text{hr} = \text{wage}$

Section 1.6

(2) Net revenue $= \frac{28\,350}{1.05} = \$27000$

GST Collected $= 28\,350 - 27000$

$= \$1350$

GST paid = GST on amount spent

$= (0.05)(8000)$

$= 400$

GST to repay = GST Collected − GST paid

$= 1350 - 400$

$= \$950$

(6) PRICE of snowboard in ontario

625

PST: $625(0.08) = 50$

GST: $625(0.05) = 31.25$

$\$706.25$

PRICE of snowboard in calgary

625

PST $= 625(0.08) = 31.25$

$\$656.25$

Difference $= 706.25 - 656.25 = \$50$

(8) Property tax $= \frac{\text{Mill rate}}{1000}$ (assessed value)

$= \frac{19.368}{1000}(225\,000)$

$= \$4357.80$

(10)

a) Total expenditures $= 10\,050\,000 + 2\,000\,000 + 250\,000 + 700\,000 + 850\,000$

$= \$13\,850{,}000$

The amount to be raised by property tax $= 0.8(13\,850\,000)$

$= 11\,080\,000$

b) Property tax $= \frac{\text{Mill rate}}{1000}$ (assessed value)

$11\,080\,000 = \frac{\text{Mill rate}}{1000}(250\,000\,000)$

$44.32 =$ Mill rate

c) property tax $= \frac{\text{Mill rate}}{1000}$ (assessed value)

$= \frac{44.32}{1000}(175\,000)$

$= \$7756$

§5.1

C)2

$N = (1-d)L$

$= (1 - 16\frac{2}{3}\%)\ 49.98$

$= \$41.65$

#4

$d = \frac{L-N}{L}$

$= \frac{1136-760}{1136}$

$= 33\%$

#14

a)

$N = (1-d_1)(1-d_2)(1-d_3)L$

$= (1-16\frac{2}{3}\%)(1-10\%)(1-8\%)174$

$= \$120.06$

b)

Total amount

$= 174 - 120.06$

$= \$53.94$

c) $SPF = 1 - [(1-d_1)(1-d_2)(1-d_3)]$

$= 31\%$

#18 $N = (1-d_1)(1-d_2)(1-d)L$

$274.89 = (1-25\%)(1-15\%)(1-d)440$

$0.98 = (1-d)$

$d = 2\%$

#22 $N = (1-d_1)(1-d_2)(1-d_3)L$

$564.48 = (1-33\frac{1}{3}\%)(1-10\%)(1-2\%)L$

$L = \$960$

#26

$87.40 = (1-d_1)(1-d_2)125$

$87.40 = (1-24\%)(1-d_2)125$

$0.92 = (1-d_2)$

$8\% = d_2$

§5.2

#2

a) July 1st

b) $N = (1-2\%)6200$

$= 0.98(6200)$

$= \$6076$

#8 $N = (1-5\%)740$

$= (0.95)740$

$= \$703$

#16

b) $d = \frac{L-N}{L}$

$= \frac{26465 - 24877.10}{26465}$

$= 6\%$

#14

a) $(1-5\%)(\text{credit paid}) = (\text{amount paid})$

$0.95(\text{credit paid}) = 5966$

$\text{credit paid} = 6280$

b) $\text{Balance} = 13780 - \text{credit paid}$

$= 13780 - 6280$

$= \$7500$

a) $\text{discount} = 26465 - 24877.10$

$= \$1587.90$