

## ASSIGNMENT # 2

$$3.1 \text{ (A) } 1) a) \frac{12}{32} = \frac{3}{8} \text{ or } 12:32 = 3:8$$

$$b) \frac{84}{56} = \frac{3}{2} \text{ or } 3:2$$

$$2) a) 12 \text{ DIMES} = 120¢, 5 \text{ QUARTERS} = 125¢$$
$$\therefore \frac{120}{125} = \frac{24}{25} \text{ or } 24:25$$

$$b) 3 \text{ DAYS} = 72 \text{ HOURS}$$

$$\therefore \frac{15}{72} = \frac{5}{24} \text{ or } 5:24$$

$$3) b) \frac{2.4}{8.4} = \frac{2}{7} \text{ or } 2:7$$

$$f) \frac{\frac{5}{3}}{\frac{7}{5}} = \frac{25}{21} \text{ or } 25:21$$

$$n) 5\frac{1}{4} : 5\frac{5}{6} = 9:10 \text{ or } \frac{9}{10}$$

$$\text{(B) } 2500 : 87500 = 1:35$$

$$4) 4.25 : 2.75 : 3.25 = 17 : 11 : 13$$

$$e) 20 : 45 : 5 = 4 : 9 : 1$$

$$\textcircled{c} 2) \text{ TOTAL AREA} = 1000 + 600 + 800 + 400 \\ = 2800 \text{m}^2$$

ALLOCATION:

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

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

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

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

$$4) \text{ TOTAL AMOUNT OF INVESTMENTS} = 10.8 + 8.4 + 14.4 = 33.6$$

ALLOCATION:

$$\text{NORTHERN DIV: } \frac{10.8}{33.6} (588000) = \$189000$$

$$\text{EASTERN DIV: } \frac{8.4}{33.6} (588000) = \$147000$$

$$\text{WESTERN DIV: } \frac{14.4}{33.6} (588000) = \$252000$$

$$6) \frac{1}{8} : \frac{1}{4} : \frac{1}{2} : \frac{1}{16}, \text{ LCD} = 16$$

$$2 : 4 : 8 : 1 \quad \therefore \# \text{ OF PARTS} = 2 + 4 + 8 + 1 = 15$$

ALLOCATION:

$$1^{\text{ST}} \text{ DEPT: } \frac{2}{15} (480000) = \$64000$$

$$3^{\text{RD}} \text{ DEPT: } \frac{8}{15} (480000) = \$256000$$

$$2^{\text{ND}} \text{ DEPT: } \frac{4}{15} (480000) = \$128000$$

$$4^{\text{TH}} \text{ DEPT: } \frac{1}{15} (480000) = \$32000$$

$$3.2 \text{ (A) } 2) \quad \frac{n}{7} = \frac{24}{42}$$

$$42n = (24)(7)$$

$$n = 4$$

$$a) \quad \frac{2.17}{1.61} = \frac{k}{4.6}$$

$$k = 6.2$$

$$16) \quad \frac{\frac{3}{4}}{t} = \frac{\frac{5}{8}}{\frac{4}{9}}$$

$$t = \frac{8}{15}$$

$$\text{(B) } 2) \quad \frac{28}{1000} = \frac{854}{x}$$

$$x = \$30500$$

(c) a) LET  $x$  BE THE VALUE OF THE REMAINING PART

$$\therefore \frac{1}{3} = \frac{1300}{x}$$

$$x = \$3900$$

~~VALUE OF DESTROYED PART OF INVENTORY~~

~~2/8~~

LET  $y$  BE THE TOTAL VALUE OF INVENTORY

$$\frac{3}{8} = \frac{3400}{y}, \quad \text{~~2/8~~}$$

$$y = \$10400$$

$$\therefore \text{VALUE OF INVENTORY DESTROYED BY FIRE} = \frac{5}{8} (10400) = \$6500$$

b) \$10 400

$$\frac{\text{LABOUR COST}}{\text{MATERIAL COST}} = \frac{1}{3}$$

$$\frac{15}{\text{MATERIAL COST}} = \frac{1}{3}$$

$$\text{MATERIAL COST} = \$45$$

$$\frac{\text{MATERIAL COST}}{\text{TOTAL COST}} = \frac{5}{8}$$

$$\frac{45}{\text{TOTAL COST}} = \frac{5}{8}$$

$$\therefore \text{TOTAL COST} = \$72$$

3.3

$$\begin{aligned} \text{(A) 2) PERCENTAGE} &= \text{BASE} \times \text{RATE} \\ &= (950)(0.001) \\ &= 0.95 \end{aligned}$$

$$\begin{aligned} \text{a) PERCENTAGE} &= \text{BASE} \times \text{RATE} \\ &= (240)(0.15) \\ &= 36 \end{aligned}$$

$$\begin{aligned} \text{10) PERCENTAGE} &= \text{BASE} \times \text{RATE} \\ &= 500(0.005) \\ &= 2.5 \end{aligned}$$

$$\begin{aligned} \text{(B) 2) PERCENTAGE} &= \text{BASE} \times \text{RATE} \\ &= (400)(1.375) \\ &= \$550 \end{aligned}$$

$$\begin{aligned} \text{a) PERCENTAGE} &= \text{BASE} \times \text{RATE} \\ &= (1600)(1.75) \\ &= \$2800 \end{aligned}$$

$$\begin{aligned} \text{10) PERCENTAGE} &= \text{BASE} \times \text{RATE} \\ &= (90)(1.6) \\ &= \$150.00 \end{aligned}$$

$$\textcircled{C} \quad 2) \text{ PERCENTAGE} = \text{BASE} \times \text{RATE}$$

$$\therefore \text{RATE} = \frac{\text{PERCENTAGE}}{\text{BASE}}$$

$$= \frac{54}{72}$$
$$= 75\%$$

$$\textcircled{C} \quad \text{RATE} = \frac{\text{PERCENTAGE}}{\text{BASE}}$$

$$= \frac{11}{440}$$
$$= 2.5\%$$

$$\textcircled{D} \quad \text{RATE} = \frac{39}{18} = 216.6\%$$

$$\textcircled{D} \quad 2) \text{ RATE} = \frac{36}{15}$$
$$= 240\%$$

$$\textcircled{C} \quad \text{PERCENTAGE} = \text{RATE} \times \text{BASE}$$

$$\text{BASE} = \frac{\text{PERCENTAGE}}{\text{RATE}}$$

$$= \frac{300}{2.5}$$
$$= \$120$$

OR

$$300 = 250\% \text{ OF } x$$

$$300 = 2.5x$$

$$\therefore x = \$120$$

~~13) RATE =~~

$$\textcircled{D} \quad \text{RATE} = \frac{\text{PERCENTAGE}}{\text{BASE}}$$

$$= \frac{180}{450}$$
$$= 40\%$$

$$\begin{aligned} 2) \text{ LABOUR} &= 37\frac{1}{2}\% \text{ OF TOTAL COST} \\ &= (0.375)(72) \\ &= \$27 \end{aligned}$$

$$(e) \text{ PERCENTAGE} = \text{RATE} \times \text{BASE}$$

$$\text{DEDUCTION} = \text{RATE} \times \text{GROSS SALARY}$$

$$53.46 = (0.0495)(\text{GROSS SALARY})$$

$$\text{GROSS SALARY} = \$1080$$

$$(d) \text{ RATE} = \frac{\text{PERCENTAGE}}{\text{BASE}}$$

$$= \frac{18}{45}$$

$$= 45\%$$

$$1.5 \text{ (A) } 2) \text{ a) } \# \text{ OF PAY PERIODS} = \frac{52}{2} = 26$$

$$\therefore \frac{\$23,868.00}{26} = \$918 \text{ IS HER REGULAR GROSS PAY.}$$

$$b) \text{ RATE} = \frac{918}{2(37.5)} = \$12.24/\text{HR}$$

# OF HOURS  
PER PAY PERIOD

$$c) \text{ GROSS PAY} = (\text{REGULAR GROSS PAY}) + (\text{OVERTIME PAY})$$
$$= 918 + 12.24(1.5)(8.5)$$
$$= \$1074.06$$

← NOT ASSIGNED

$$4) \text{ a) YEARLY GROSS EARNINGS} = (863.20)(2)(12)$$
$$= \$20,716.80$$

$$\text{WEEKLY GROSS EARNINGS} = \frac{20,716.80}{52} = \$398.40$$

$$\text{HOURLY RATE OF PAY} = \frac{398.40}{52} = \$7.66$$

$$b) \text{ OVERTIME PAY} = \text{GROSS EARNINGS WITH OVERTIME} - (\text{REGULAR GROSS EARNINGS})$$
$$= \cancel{\$990.19} \$990.19 - \$863.20$$
$$= \$126.99$$

$$\# \text{ OF OVERTIME HOURS} = \frac{\text{OVERTIME PAY}}{\text{OVERTIME RATE}} = \frac{126.99}{(7.66)(1.5)} = 11.05 \text{ HOURS}$$

$$8) \text{ NET SALES} = 24250 - 855 = \$23395$$

$$\begin{aligned} \text{COMMISSION} &= 4.5\% \text{ OF } 10000 + 6\% \text{ OF } 5000 + 8\% \text{ OF } 8395 \\ &= (0.045)(10000) + (0.06)(5000) + (0.08)(8395) \\ &= \$1421.60 \end{aligned}$$

$$14) \text{ COMMISSION} = 337.50 - 264.00 \\ = \$73.50$$

$$\begin{aligned} \text{COMMISSION} &= (\text{RATE}) \times (\text{SALES} - \text{QUOTA}) \\ 73.5 &= (0.0875) \times (\text{SALES} - \text{QUOTA}) \\ \frac{73.5}{0.0875} &= \text{SALES} - \text{QUOTA} \end{aligned}$$

$$\$840.00 = \text{SALES} - \text{QUOTA}$$

$$840.00 + \text{QUOTA} = \text{SALES}$$

$$840.00 + 4800 = \text{SALES}$$

$$\therefore \text{SALES} = \$5640$$

~~REGULAR~~  
~~SALES~~ ~~QUOTA~~ ~~RATE~~

~~$$337.50 = 0.0875 \times (\text{SALES} - 4800)$$~~  
~~$$337.50 = 0.0875 \times \text{SALES} - 417.00$$~~  
~~$$754.50 = 0.0875 \times \text{SALES}$$~~  
~~$$\text{SALES} = \frac{754.50}{0.0875}$$~~  
~~$$\text{SALES} = 8622.86$$~~

~~$$\therefore \text{SALES} = \$8622.86$$~~



(6) MONDAY  $7\frac{1}{2}$   
 TUESDAY  $9 = 7\frac{1}{2} + 1\frac{1}{2}$   
 WEDNESDAY  $7\frac{1}{2}$   
 THURSDAY  $10\frac{1}{2} = 7\frac{1}{2} + 3$   
 FRIDAY  $7\frac{1}{2}$   
 SATURDAY  $6$

METHOD A: GROSS EARNINGS = (GROSS EARNINGS FOR A REGULAR WORKWEEK) + (OVERTIME PAY)

$$= (7\frac{1}{2})(5)(10.60) + [(4.5)(1.5)(10.60) + (6)(2)(10.60)]$$

$$= \$546.25$$

METHOD B: GROSS EARNINGS =

$$= \left( \begin{array}{l} \text{GROSS EARNINGS FOR ALL} \\ \text{HOURS AT REGULAR} \\ \text{WAGE} \end{array} \right) + \left( \begin{array}{l} \text{OVERTIME PREMIUM} \\ \text{FOR OVERTIME HOURS} \end{array} \right)$$

$$= [(7\frac{1}{2} + 9 + 7\frac{1}{2} + 10\frac{1}{2} + 7\frac{1}{2} + 6)(10.60)] +$$

$$+ [(4.5)(0.5)(10.60) + (6)(1)(10.60)]$$

18) LET  $x$  BE THE REGULAR HOURLY RATE

$$361 = (40)(x) + (1.5)(5)(x)$$

$$361 = 40x + 7.5x$$

$$361 = 47.5x$$

$$\$ 7.60 = x$$

$\therefore$  HOURLY RATE = \$ 7.60

1.6 (A) 2) LET  $x$  BE NET REVENUE

$$28620 = x + 5\% \text{ OF } x$$

$$28620 = x + 0.05x$$

$$28620 = 1.05x$$

$$\therefore x = \$27257.14$$

$$\begin{aligned} \text{GST COLLECTED} &= 28620 - 27257.14 \\ &= \$1362.86 \end{aligned}$$

$$\text{GST PAID} = (0.05)(8000) = \$400$$

$$\begin{aligned} \text{GST OWED} &= \text{GST COLLECTED} - \text{GST PAID} \\ &= 1362.82 - 400 \\ &= \$962.82 \end{aligned}$$

(c) PRICE OF SNOWBOARD IN ONTARIO

$$\text{PRICE BEFORE TAXES: } 625$$

$$\text{PST: } (625)(0.08) = 50$$

$$\text{GST: } (625)(0.05) = 31.25$$

$$\underline{\$706.25}$$

PRICE OF SNOWBOARD IN QUEBEC

$$\text{PRICE BEFORE TAXES: } 625$$

$$\text{GST: } (625)(0.05) = 31.25$$

$$\text{PST: } (625 + 31.25)(0.075) = 49.22$$

$$\underline{\$705.47}$$

$$\begin{aligned} 8) \text{ PROPERTY TAX} &= (\text{MILL RATE})(0.001)(\text{ASSESSED VALUE}) \\ &= (19.368)(0.001)(225000) \\ &= \$ 4357.80 \end{aligned}$$

$$\begin{aligned} (10) \text{ a) TOTAL EXPENDITURES} &= 10\,050\,000 \\ &+ 2\,000\,000 \\ &+ 250\,000 \\ &+ 700\,000 \\ &+ \underline{850\,000} \\ &= \$ 13\,850\,000 \end{aligned}$$

$$\begin{aligned} \text{AMOUNT TO BE RAISED} &= (0.8)(13\,850\,000) = \$ 11\,080\,000 \\ &\text{BY PROPERTY TAX} \end{aligned}$$

$$\begin{aligned} \text{b) PROPERTY TAX} &= (\text{MILL RATE})(0.001)(\text{ASSESSED VALUE}) \\ 11\,080\,000 &= (\text{MILL RATE})(0.001)(250\,000\,000) \\ \therefore \text{MILL RATE} &= \frac{11\,080\,000}{(0.001)(250\,000\,000)} \\ &= 44.32 \end{aligned}$$

$$\begin{aligned} \text{c) PROPERTY TAX} &= (\text{MILL RATE})(0.001)(\text{ASSESSED VALUE}) \\ &= (44.32)(0.001)(175\,000) \\ &= \$ 7756 \end{aligned}$$

$$\begin{aligned}
 \text{5.1 } \textcircled{2) } N &= (1-d)L \\
 &= (1-0.16)49.98 \\
 &= \$41.65
 \end{aligned}$$

~~4)  $\$1136 - 760 = \$376$~~

$$4) 1136 - 760 = \$376$$

$$\begin{aligned}
 d &= \frac{\$376}{\$1136} = 33\%
 \end{aligned}$$

$$\begin{aligned}
 14) \text{ a) } N &= (1-d_1)(1-d_2)(1-d_3)L \\
 &= (1-0.16)(1-0.1)(1-0.08)174 \\
 &= \$120.06
 \end{aligned}$$

$$\begin{aligned}
 \text{b) TOTAL AMOUNT} &= 174 - 120.06 = \$53.94 \\
 \text{OF DISCOUNT} &
 \end{aligned}$$

$$\text{c) } SPF = 1 - [(1-d_1)(1-d_2)(1-d_3)] = 31\%$$

$$\begin{aligned}
 18) N &= (1-d_1)(1-d_2)(1-d_3)L \\
 274.89 &= (1-0.25)(1-0.15)(1-d_3)440 \\
 0.98 &= (1-d_3) \\
 d_3 &= 2\%
 \end{aligned}$$

$$\begin{aligned}
 22) N &= (1-d_1)(1-d_2)(1-d_3)L \\
 564.48 &= (1-0.3)(1-0.1)(1-0.02)L \\
 L &= \$960
 \end{aligned}$$

$$\begin{aligned}
 26) N &= (1-d_1)(1-d_2)L \\
 87.40 &= (1-0.24)(1-d_2)125 \\
 0.92 &= 1-d_2 \\
 8\% &= d_2
 \end{aligned}$$

5.2 (C) 2) a) JULY 1<sup>st</sup>

$$b) N = (1 - 0.02)(6200) = (0.98)(6200) = \$6076$$

$$8) N = (1 - 0.05)(740) = \$703$$

$$14) (1 - 5\%)(\text{AMOUNT OF CREDIT}) = \text{AMOUNT PAID}$$

$$0.95 (\text{AMOUNT OF CREDIT}) = 5966$$

$$\text{AMOUNT OF CREDIT} = \frac{5966}{0.95}$$

$$= \$6280$$

$$16) a) \text{DISCOUNT} = 26465 - 24877.10 = \$1587.90$$

$$b) d = \frac{1587.90}{26465} = 6\%$$

5.3 (C) 2)  $S = C + E + P$

$$50 = 25 + 30\% \text{ OF } 50 + P$$

$$50 = 25 + (0.30)(50) + P$$

$$P = \$10$$

$$4) N = (1 - d_1)(1 - d_2)L$$

$$= (1 - 0.2)(1 - 0.2)5$$

$$= (1 - 0.2)(1 - 0.2)5$$

$$= \$3.20$$

$$S = C + E + P$$

$$= 3.20 + (0.45)(3.20) + (0.15)(3.20)$$

$$= \$5.12$$

$$\begin{aligned}
 6) a) N &= (1-d_1)(1-d_2)L \\
 &= (1-0.4)(1-0.25)55 \\
 &= \$24.75
 \end{aligned}$$

$$\frac{\text{RATE OF MARKUP}}{\text{MARKUP}} = \frac{\text{MARKUP}}{\text{MARKUP}} = \frac{54.45 - 24.75}{24.75} = 120\%$$

$$b) \frac{\text{RATE OF MARKUP}}{\text{MARKUP}} = \frac{54.45 - 24.75}{54.45} = 54.55\%$$

$$\begin{aligned}
 10) a) S &= C + M \\
 74.55 &= C + 0.4C \\
 74.55 &= 1.4C \\
 \$53.25 &= C
 \end{aligned}$$

$$b) \frac{\text{RATE OF MARKUP}}{\text{MARKUP}} = \frac{74.55 - 53.25}{74.55} = 29\%$$

$$\begin{aligned}
 12) a) S &= C + M \\
 S &= 12.80 + 0.6S \\
 0.4S &= 12.80 \\
 S &= \$32.00
 \end{aligned}$$

$$b) \frac{\text{RATE OF MARKUP}}{\text{MARKUP}} = \frac{32.00 - 12.80}{12.80} = 150\%$$

5.4

$$\begin{aligned}
 2) a) S &= C + E + P \\
 S &= 44 + 0.27S + 0.18S \\
 S &= \$80
 \end{aligned}$$

$$b) \text{SALE PRICE} = (1-0.4)(80) = \$48$$

$$\begin{aligned}
 c) \text{TOTAL COST} &= 44 + (0.27)S \\
 &= 44 + (0.27)(80) \\
 &= \$65.60
 \end{aligned}$$

$$\begin{aligned}
 \text{PROFIT} &= \text{SALE PRICE} - \text{TOTAL COST} = 48 - 65.60 = \$(-17.60) \\
 &\text{OPERATIONAL LOSS}
 \end{aligned}$$