44) $\frac{a+b}{b} = \frac{c}{d}$

$d(a + b) = bc$
$ad + bd = bc$
$ad = bc - bd$
$ad = b(c - d)$
$b = \frac{ad}{(c - d)}$

ID: cbm8h 2-141
Diff: 2 Page Ref: pgs 77-79

45) $23240 * (2\frac{1}{2} + 3\frac{1}{4} + 4\frac{1}{5})$

$= 23240 * (2\ 10/20 + 3\ 5/20 + 4\ 4/20)$
$= 23240 * (9\ 19/20) = 23240 * 9.95$
$= \$231238$
ID: cbm8h 1-16+
Diff: 3 Page Ref: pgs 12-14

46) Total Hours

$= 15\frac{1}{2} + 14\frac{3}{4} + 14\frac{1}{8}$

$= 15.5 + 14.75 + 18.125$
$= 48.375$
Total cost of labor $= 48.375 * 14.75 = \$713.53$
ID: cbm8h 1-17
Diff: 3 Page Ref: pgs 12-14

47) Total Hours

$= 10\frac{1}{2} + 15\frac{3}{5} + 20\frac{1}{4}$

$= 10.5 + 15.60 + 20.25$
$= 46.35$ 46,35 20 = 927.00
Total cost of labor = ~~48.375~~ * ~~14.75~~ = $713.53
ID: cbm8h 1-18
Diff: 3 Page Ref: pgs 12-14

48) Let the taxable income (in dollars) be x.
Then $x - 36\ 000.00$ is the amount that his income is greater than \$36 000.00.

$3440.00 + 0.22(x - 36\ 000.00) = 3684.00$
$3440.00 + 0.22x - 7920.00 = 3684.00$
$0.22x = 8164.00$
$x = \$37\ 109.09$
ID: cbm8h 2-142
Diff: 2 Page Ref: pgs 79-83

49) Let the regular selling price be $\$x$.

Sale price $= \$\left[x - \frac{1}{4}x\right]$

$\therefore \quad x - \frac{1}{4}x = 776$

$4x - x = 3104$

$3x = 3104$

$x = 1034.67$

The regular selling price was $1034.67.

ID: cbm8h 2-144

Diff: 2 Page Ref: pgs 79-83

50) Let the floor space occupied by copper be x.

Floor space occupied by zinc $= 2x + 500$

Total floor space $= x + 2x + 500$

$\therefore \quad x + 2x + 500 = 9500$

$3x = 9000$

$x = 3000$

The floor space occupied by copper is 3000 square metres.

ID: cbm8h 2-179

Diff: 2 Page Ref: pgs 79-83

51) Let the regular selling price be $\$x$.

Reduction in price $+ \$\frac{1}{7}x$

$x - \frac{1}{7}x = 294$

$\frac{6}{7}x = 294$

$x = \$343.00$

ID: cbm8h 2-177

Diff: 2 Page Ref: pgs 79-83

52) Let the number of units of Product A be x.

Number of units of Product B $= 150 - x$.

Number of hours for Product A $= 4x$.

Number of hours for Product B $= 7(150 - x)$.

$\therefore \quad 4x + 7(150 - x) = 810$

$4x + 1050 - 7x = 810$

$-3x = -240$

$x = 80$

The number of units if Product B is $150 - 80 = 70$.

ID: cbm8h 2-181

Diff: 2 Page Ref: pgs 79-83

53) Let x be the number on the second shift.
Then $3x$ is the number on the first shift.
And $x + 4$ is the number on the third shift.

$x + 3x + (x + 4) = 204$
$5x = 200$
$x = 40$ on the second shift
$3x = 120$ on the first shift
$x + 4 = 44$ on the third shift
ID: cbm8h 2-180
Diff: 2 Page Ref: pgs 79-83

54) Let the shorter piece be x cm.
Length of the longer piece = $(2x + 30)$ cm.
Total length = $(x + 2x + 30)$ cm.
$\therefore \quad x + 2x + 30 = 120$
$3x = 90$
$x = 30$ 30 90cm
The longer piece is 2(30) cm + ~~30~~ cm = ~~75~~ cm.
ID: cbm8h 2-147
Diff: 2 Page Ref: pgs 79-83

55)

Quantity	*Unit Price*	*Value*
48	\$2.45	\$117.60
48	0.83 1/8	39.90
16	2.12	33.92
60	1.33 1/6	79.90
Total:		\$271.32

ID: cbm8h 1-21
Diff: 1 Page Ref: pgs 12-14

QUESTION (B)4 ON PAGE 19

BALANCE		# OF MONTHS		
\$7500	×	2	=	\$15000
\$6600	×	5	=	\$33000
\$8100	×	1	=	\$8100
\$7800	×	4	=	\$31200
				\$87300

AVERAGE BALANCE = $\frac{87300}{12}$ = \$7275

1) $9 = \log_3 19683$
ID: cbm8h 2-99
Diff: 2 Page Ref: pgs 61-66

2) $\log_{10} .0001 = -4$ OR $\log .0001 = -4$
ID: cbm8h 2-101
Diff: 2 Page Ref: pgs 61-66

3) $e^{-3x} = 12$, $-3x = \log_e 12$, or $\ln 12 = -3x$
ID: cbm8h 2-102
Diff: 2 Page Ref: pgs 61-66

4) $\ln 60 = 4.094344562$
ID: cbm8h 2-107
Diff: 2 Page Ref: pgs 61-66

5) $\ln[400(1.17^7)] = \ln 400 + \ln 1.17^7$
$= \ln 400 + 7(\ln 1.17)$
$= 5.9914645 + 7(.1570038)$
$= 5.9914645 + 1.0990262 = 7.090491$
ID: cbm8h 2-108
Diff: 2 Page Ref: pgs 61-68

6) 250:120:80
25:12:8
ID: cbm8h 3-1
Diff: 1 Page Ref: pgs 96-98

7) 30:18
5:3
ID: cbm8h 3-2
Diff: 1 Page Ref: pgs 96-98

8) $n{:}6 = 24{:}42$
$42n = 24 * 6$
$n = \dfrac{24 * 6}{42} = 3.42857$
ID: cbm8h 3-11
Diff: 1 Page Ref: pgs 102-106

9) $7{:}5 = x{:}40$
$5x = 40 * 7$
$x = \dfrac{40 * 7}{5} = 56$
ID: cbm8h 3-12
Diff: 1 Page Ref: pgs 102-106

10) $\dfrac{4.2}{x} = \dfrac{4.375}{25.6}$
$x = \dfrac{4.2 \times 25.6}{4.375}$
$x = 24.576$
ID: cbm8h 3-13
Diff: 1 Page Ref: pgs 102-106

11) $\frac{3}{4}:t=\frac{5}{16}:\frac{4}{9}$

$\frac{5}{16}t=\frac{3}{4}*\frac{4}{9}$

$t=\frac{3}{4}*\frac{4}{9}*\frac{16}{5}=1.0666666$

ID: cbm8h 3-17
Diff: 2 Page Ref: pgs 102–106

12) $\frac{16}{7}:\frac{7}{9}=\frac{15}{11}:t$

$\frac{16}{7}t=\frac{15}{11}*\frac{7}{9}$

$t=\frac{15}{9}*\frac{7}{9}*\frac{7}{16}=.464$

ID: cbm8h 3-20
Diff: 2 Page Ref: pgs 102–106

13) $R=\frac{36}{14}=257\%$

ID: cbm8h 3-27
Diff: 1 Page Ref: pgs 110–111

14) 165% of $x = 370$

$1.65x = 370$

$x = 224.24$

ID: cbm8h 3-28
Diff: 1 Page Ref: pgs 111–113

15) $x=\frac{1}{5}\%$ of 12150

$x = .002 * 12150$

$x = \$24.30$

ID: cbm8h 3-36
Diff: 1 Page Ref: pgs 107–110

16) Direct material : direct labor : overhead

= $7.25 $4.75 $3.50

= 725:475:350

= 29:19:14

ID: cbm8h 3-4
Diff: 1 Page Ref: pgs 96–98

17) Price per square meter $=\frac{38225.00}{310 + 120 + 475}=\$42.237569$

Amount paid by $B = 120 \times$ price per square meter $= 120 * 42.237569 = \$5068.51$

ID: cbm8h 3-6
Diff: 2 Page Ref: pgs 98–99

18) Convert into fractions with the same denominators

$$\frac{1}{3}:\frac{1}{4}:\frac{1}{5}=\frac{20}{60}:\frac{15}{60}:\frac{12}{60}$$

the ratio is 20:15:12
total number of parts = 20 + 15 + 12 = 47
the value of each part is 20000 ÷ 47 = 425.53

Sean's share = 425.53 × 20 = $8510.64
Paul's share = 425.53 × 15 = $6382.98
Wallis's share = 425.53 × 12 = $5106.38
ID: cbm8h 3-10
Diff: 2 Page Ref: pgs 98-99

19) Let the labour cost for 2005 be $\$x$.

$$\frac{17.50}{13.25}=\frac{x}{231875}$$

$$x=\frac{17.50\times 231875}{13.25}$$

$x = \$306250.00$
ID: cbm8h 3-21
Diff: 2 Page Ref: pgs 102-106

20) Let the tax assessment for a tax of $554 be $\$x$.

$$\frac{25.5}{\$1000 assessment}=\frac{\$554 tax}{\$x\_assessment}$$

$25.5x = 554000$
$x = \$21725.49$
ID: cbm8h 3-22
Diff: 2 Page Ref: pgs 102-106

21) Net cost = 12050(.8)(.84)(.9066666) = 7341.82
ID: cbm8h 5-1
Diff: 1 Page Ref: pgs 182-185

22) Let labor cost be $\$x$.

$$x=37\frac{1}{2}\% \text{ of } 72$$

$$x=\frac{3}{8}\times 72$$

$x = 27$
ID: cbm8h 3-37
Diff: 2 Page Ref: pgs 113-114

23) Let the original cost be $\$x$.

250% of $x = 218000$
$2.5x = 218000$
$x = 87200$
ID: cbm8h 3-41
Diff: 2 Page Ref: pgs 113-114

24) Discount = 2149 – 1360 = $789.00

$$\text{Rate} = \frac{789.00}{2149.00} = 36.715\%$$

ID: cbm8h 5-3
Diff: 1 Page Ref: pgs 179–182

25) 33.5% of list = $54.72
.335L = 54.72
L = $163.34
Sale price = 163.34 – 54.72 = $108.62
ID: cbm8h 5-6
Diff: 2 Page Ref: pgs 179–182

26) 114.54 = L(1 – 0.17)
0.83L = 114.54
L = $138.00
ID: cbm8h 5-8
Diff: 1 Page Ref: pgs 179–182

27) .83L = 84.62
L = $101.95
ID: cbm8h 5-13
Diff: 2 Page Ref: pgs179–182