PERCENTAGE

ROB OLLIS

Edition 1

MC

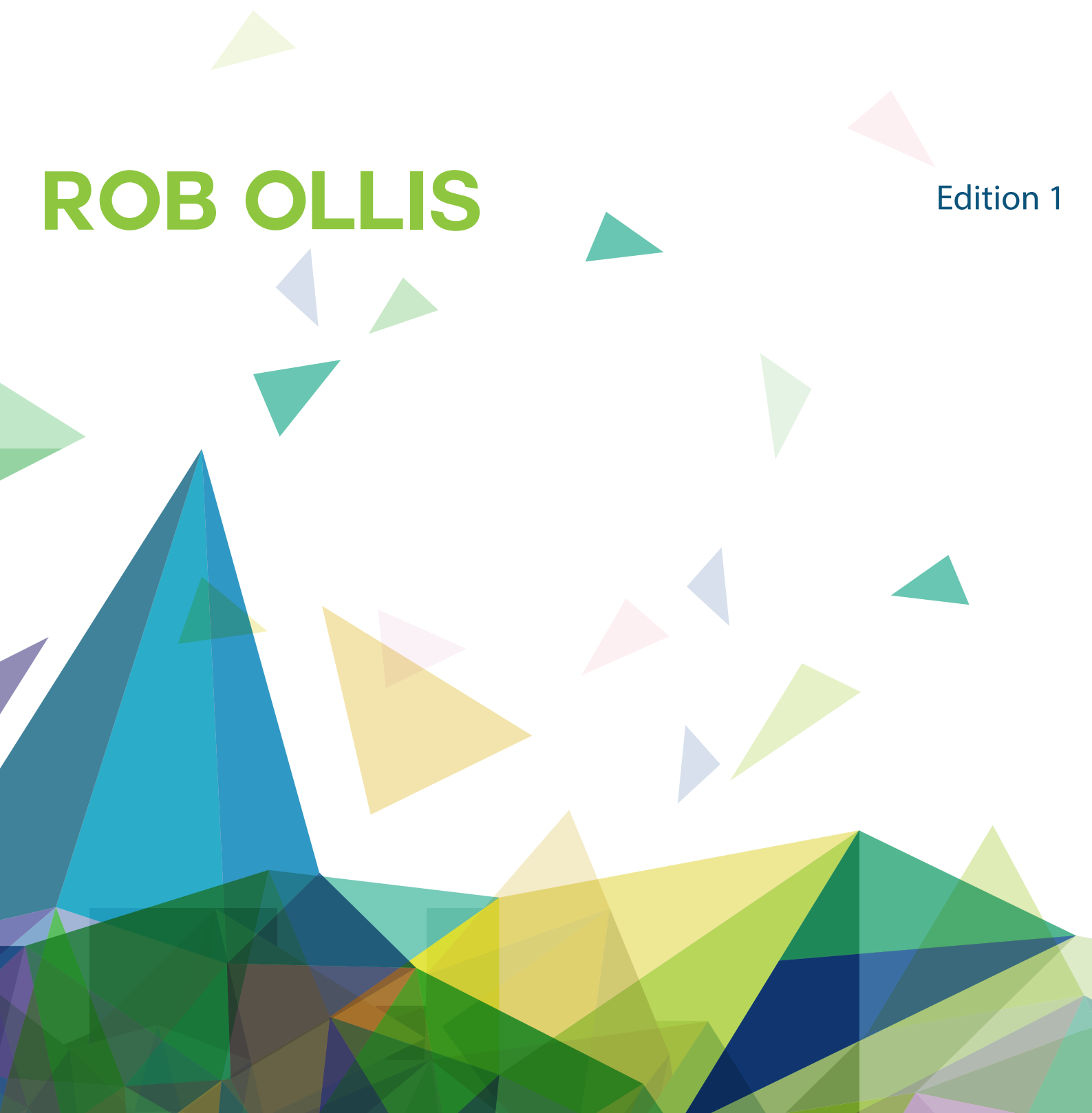**MASTER COACHING**

Everyone is talking percentages these days – whether it's interest rates, surveys, CPI or whatever. Knowing and understanding the % symbol is part of survival for the 21st century.

Per<u>cent</u> means per <u>hundred</u>.

<u>50 percent</u> means 50 per hundred or $\dfrac{50}{100}$ written as a fraction.

Here are two more examples:

<u>10 percent</u> $= \dfrac{10}{100}$ as a fraction   <u>76 percent</u> $= \dfrac{76}{100}$ as a fraction

<u>%</u> : We use the symbol % to mean percentage ... ie 3% $= \dfrac{3}{100}$

Set 1 … Write these as fractions:

a	40%	**b**	20%	**c**	15%	**d**	80%
e	95%	**f**	70%	**g**	4%	**h**	2%
i	60%	**j**	45%	**k**	59%	**l**	13%
m	21%	**n**	36%	**o**	42%	**p**	63%

Percentages to decimals:

To change a percentage to a decimal, first change it to a fraction with a denominator of 100.

$$53\% = \dfrac{53}{100} = 0\cdot53 \qquad \text{Note that } 0\cdot53 = (0\cdot53 \times 100)\%$$
$$= 53\%$$

Set 2 … Write these as decimals :

a	43%	**b**	71%	**c**	14%	**d**	75%
e	60%	**f**	8%	**g**	91%	**h**	20%
i	33%	**j**	4%	**k**	100%	**l**	7%

Set 3 … Write these as percentages :

a	$\dfrac{47}{100}$	**b**	$\dfrac{16}{100}$	**c**	$\dfrac{73}{100}$	**d**	$\dfrac{41}{100}$
e	$\dfrac{5}{100}$	**f**	$\dfrac{92}{100}$	**g**	$0\cdot58$	**h**	$0\cdot67$
i	$0\cdot12$	**j**	$0\cdot83$	**k**	$0\cdot74$	**l**	$0\cdot60$

Set 7 - convert these percentages to decimals ...... note: $\frac{1}{2}=0\cdot5$, $\frac{1}{4}=0\cdot25$, $\frac{3}{4}=0\cdot75$

a 16%   **b** $1\cdot6\%$ **c** 160%   **d** $0\cdot016\%$

e 7%   **f** $3\frac{1}{2}\%$ **g** 204%   **h** $17\frac{1}{2}\%$

i 9%   **j** $7\frac{3}{4}\%$ **k** $36\cdot3\%$ **l** $1\cdot82\%$

m $\frac{3}{4}\%$ **n** $\frac{1}{2}\%$ **o** 20000%   **p** 100%

q $12\frac{1}{2}\%$ **r** $64\cdot33\%$ **s** $8\frac{1}{4}\%$ **t** $10\frac{1}{2}\%$

u $6\frac{1}{4}\%$ **v** 308%

Set 8 ...... find these amounts by using decimal multiplication:

eg : 7% of \$802 = $0\cdot07 \times \$802 = \$56\cdot14$

a 60% of 60kg   **b** 5% of 284l   **c** 16% of 560km

d $8\frac{1}{2}\%$ of $96\cdot4$t   **e** 112% of 649kg   **f** $6\frac{1}{4}\%$ of \$960

g $2\cdot4\%$ of $63\cdot87$l   **h** 2% of 20t   **i** 300% of \$64

j $12\frac{1}{2}\%$ of 8016km   **k** $17\frac{1}{2}\%$ of 3040kg   **l** $10\frac{1}{4}\%$ of \$6140

m $3\frac{3}{4}\%$ of $\$9642\cdot76$ **n** 7% of 49t   **o** 60% of 60l

p 80% of 800kg   **q** 403% of $76\cdot42$l   **r** $22\frac{1}{2}\%$ of $\$9643\cdot82$

s 50% of $1\frac{1}{2}$ **t** 72% of 7308kg   **u** 11% of $\$64\cdot82$

v $6\frac{1}{2}\%$ of $12\frac{1}{2}$ **w** 9% of 9   **x** Increase \$76 by 12%

y Decrease \$96 by 15%   **z** Increase 960 by 24%   **aa** Decrease 384 by 40%

SET 13

a   Sunday

b   Profit = $4025

c   68 hours.   note : $2 \times \$12 \cdot 50 = \$25 \cdot 00$

d   30

e $240000   note :   25% of $240000 = $60000

f   Sally -14,   Elizabeth -17

g   1 hour   20 minutes

h   **i** Amount Fertilizer $= 25\text{m} \times 7\text{m} \times 100\text{g}$

           $= 17 \cdot 5\text{kg}$

     ii $\therefore$ needs 18 bags

           i.e. cost $= \$576$

i $52 \cdot 94$ hours

j   Only six patterns