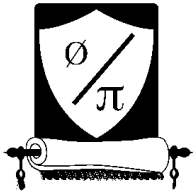


**M a s t e r C o a c h i n g**

MASTER COACHING

# Master Arithmetic 01-A





# Arithmetic 01-A

**Do not use a calculator ; be neat , and show working where necessary ....**

Some questions can be done in your head and only require the answer.

Each answer is worth 2% except Q15 which is worth 4%

1 Add / Sub : a  $8 + 207 + 95$

b 
$$\begin{array}{r} 5043 \\ -1285 \\ \hline \end{array}$$

2 Mult / Div : a 
$$\begin{array}{r} 2405 \times \\ 3 \\ \hline \end{array}$$

b 
$$5 \overline{)3510}$$

c 
$$\begin{array}{r} 5064 \times \\ 203 \\ \hline \end{array}$$

d 
$$19 \overline{)5936}$$

3 Order ... evaluate :

a  $10 - 3 \times 2 =$

b  $20 \div 5 \times 2 =$

c  $4 + 6 \div 2 =$

d  $10 - 3^2 =$

4 Convert to a fraction :

a  $0.7 =$

b  $0.061 =$

c  $9\% =$

5 Convert to a decimal :

a  $73\% =$

b  $\frac{7}{100} =$

c  $\frac{1}{4} =$

6 Convert to a percent :

a  $\frac{9}{10} =$

b  $\frac{1}{5} =$

c  $0.6 =$

7 Amounts ... find :

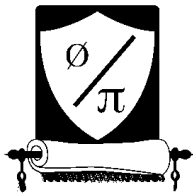
a  $9\% \text{ of } \$12 =$

b  $25\% \text{ of } 80 \text{ kg} =$

8 Grouping ... evaluate :

a  $[9 \times 5 - 3] \times 2 =$

b  $[(6 \times 4) - (12 - 8)] \div 5 =$



9 Decimals ... simplify :

a  $12 \cdot 3 + 0 \cdot 72$

b  $20 - 1 \cdot 7$

c  $0 \cdot 2 \times 0 \cdot 3 =$

d  $0 \cdot 03 \times 1000 =$

e  $12 \cdot 5 \div 4 =$

f  $6 \div 0 \cdot 03 =$

10 Fractions ... simplify :

a  $2\frac{1}{7} + 9\frac{5}{7} =$

b  $1 - \frac{3}{8} =$

c  $\frac{2}{7} \times \frac{3}{5} =$

d  $2\frac{1}{2} \times 2\frac{1}{3} =$

e  $\frac{2}{7} \div \frac{3}{5} =$

f  $3\frac{1}{4} \div 1\frac{1}{2} =$

11 Reciprocals ... find these ... the reciprocal of :

a  $3 =$

b  $1\frac{1}{2} =$

c  $0 \cdot 9 =$

d  $50\% =$

12 HCF & LCM ...

a express 45 and 60 as products of their prime factors

b find the HCF of 45 and 60

c find the LCM of 45 and 60

13 Words :

a ( the product of 10 and 5 ) plus ( the quotient of 8 and 2 )

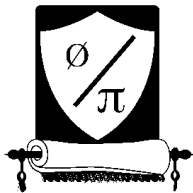
b 'three thousand and seventeen' *in numerals* .....

c *in expanded form* 6395 =

14 Patterns ... write down the next two numbers in each sequence :

a 1, 3, 5, 7, ....., .....    b 1, 3, 6, 10, ....., .....    c 7, 14, 28, 56, ....., .....

15 Arrange , small to large :  $\cdot 3 + \cdot 8$  , 10% of 8 ,  $1 \div \frac{1}{4}$  ,  $3 \div 6 + 4$  ,  $\frac{709}{1000}$  ,  $\sqrt{16} \div 10$  ...4%



Do not use a calculator ; be neat , and show working where necessary.  
Some questions can be done in your head and only require the answer.  
Each answer is worth 2% except Q15 which is worth 4%

MASTER COACHING

1 Add / Sub :

a  $8 + 207 + 95$

$$\begin{array}{r} 8 \\ 207 \\ 95 \\ \hline 310 \end{array}$$

b  $5043$

$$\begin{array}{r} -1285 \\ \hline 3758 \end{array}$$

..... 48 answers x 2%

2 Mult / Div :

a  $2405 \times 3$

$$\begin{array}{r} 2405 \\ \times 3 \\ \hline 7215 \end{array}$$

b  $5 \overline{)3510}$

$$\begin{array}{r} 702 \\ 5 \overline{)3510} \\ \underline{35} \phantom{0} \\ 10 \phantom{0} \\ \underline{10} \phantom{0} \\ 0 \phantom{0} \\ \hline \end{array}$$

c  $5064 \times 203$

$$\begin{array}{r} 5064 \\ \times 203 \\ \hline 15192 \\ 1012800 \\ \hline 1027992 \end{array}$$

d  $19 \overline{)5936}$  ie  $312 \frac{8}{19}$

$$\begin{array}{r} 312 \\ 19 \overline{)5936} \\ \underline{57} \phantom{0} \\ 23 \phantom{0} \\ \underline{19} \phantom{0} \\ 46 \phantom{0} \\ \underline{38} \phantom{0} \\ 8 \phantom{0} \\ \hline \end{array}$$

3 Order ... evaluate :

a  $10 - 3 \times 2 = 10 - 6$   
 $= 4$

b  $20 \div 5 \times 2 = 4 \times 2$   
 $= 8$

c  $4 + 6 \div 2 = 4 + 3$   
 $= 7$

d  $10 - 3^2 = 10 - 9$   
 $= 1$

4 Convert to a fraction : a  $0.7 = \frac{7}{10}$

b  $0.061 = \frac{61}{1000}$

c  $9\% = \frac{9}{100}$

5 Convert to a decimal : a  $73\% = \frac{73}{100}$   
 $= 0.73$

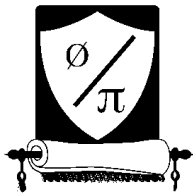
b  $\frac{7}{100} = 0.07$

c  $\frac{1}{4} = \frac{1.000...}{4}$   
 $= 0.25$

6 Convert to a percent : a  $\frac{9}{10} = \frac{90}{100}$   
 $= 90\%$

b  $\frac{1}{5} = \frac{1}{5} \times 100\%$   
 $= 20\%$

c  $0.6 = 0.6 \times 100\%$   
 $= 60\%$



7 Amounts ... find :     **a** 9% of \$12 =  $0.09 \times \$12 = \$1.08$      **b** 75% of 360 kg =  $\frac{1}{4} \times 80 \text{ kg} = 20 \text{ kg}$

8 Grouping ... evaluate :     MASTER COACHING

**a**  $[9 \times 5 - 3] \times 2 = [45 - 3] \times 2$   
 $= 42 \times 2$   
 $= 84$

**b**  $[(6 \times 4) - (12 - 8)] \div 5 = [(24) - (4)] \div 5$   
 $= [20] \div 5$   
 $= 4$

9 Decimals ... simplify :

**a**  $12.3 + 0.72 = 13.02$

$$\begin{array}{r} 12.3 \\ 0.72 \\ \hline 13.02 \end{array}$$

**b**  $20 - 1.7 = 18.3$

$$\begin{array}{r} 3.00 \\ -0.16 \\ \hline 2.84 \end{array}$$

**c**  $0.2 \times 0.3 = 0.06$

$$\frac{2}{10} \times \frac{3}{10} = \frac{6}{100}$$

**d**  $0.03 \times 1000 = 30$

**e**  $12.5 \div 4 = \frac{12.500...}{4} = 3.125$

**f**  $6 \div 0.03 = \frac{6.00}{0.03} = 200$

10 Fractions ... simplify :

**a**  $2\frac{1}{7} + 9\frac{5}{7} = 11\frac{6}{7}$

**b**  $1 - \frac{3}{8} = \frac{5}{8}$

**c**  $\frac{2}{7} \times \frac{3}{5} = \frac{6}{35}$

**d**  $2\frac{1}{2} \times 2\frac{1}{3} = \frac{5}{2} \times \frac{7}{3}$   
 $= \frac{35}{6}$   
 $= 5\frac{5}{6}$

**e**  $\frac{2}{7} \div \frac{3}{5} = \frac{2}{7} \times \frac{5}{3}$   
 $= \frac{10}{21}$

**f**  $3\frac{1}{4} \div 1\frac{1}{2} = \frac{13}{4} \div \frac{3}{2}$   
 $= \frac{13}{4} \times \frac{2}{3}$   
 $= 2\frac{1}{6}$

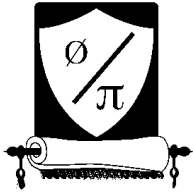
11 Reciprocals ... find these :

**a**  $3 \Rightarrow \frac{1}{3}$

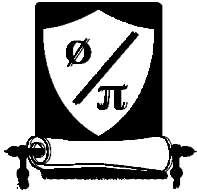
**b**  $1\frac{1}{2} = \frac{3}{2} \Rightarrow \frac{2}{3}$

**c**  $0.9 = \frac{9}{10} \Rightarrow \frac{10}{9} = 1\frac{1}{9}$

**d**  $50\% = \frac{1}{2} \Rightarrow 2$



- 12 HCF & LCM ... **a** express 45 and 60 as products of their prime factors
- $$\begin{aligned} 45 &= 3 \times 3 \times 5 \\ &= 3^2 \times 5 \end{aligned} \qquad \begin{aligned} 60 &= 2 \times 2 \times 3 \times 5 \\ &= 2^2 \times 3 \times 5 \end{aligned}$$
- b** find the HCF of 45 and 60    **c** find the LCM of 45 and 60
- 13 Words :
- a** ( the product of 10 and 5 ) plus ( the quotient of 8 and 2 )  
sum =  $10 \times 5 + 8/2 = 54$
- b** 'three thousand and seventeen' *in numerals* ..... 3017
- c** *in expanded form* ...  $6395 = 6 \times 1000 + 3 \times 100 + 9 \times 10 + 5 \times 10^0$   
 $= 6 \times 10^3 + 3 \times 10^2 + 9 \times 10^1 + 5 \times 10^0$   
 $= 6 \times 10^3 + 3 \times 10^2 + 9 \times 10 + 5$
- 14 Patterns ... write down the next two numbers in each sequence :
- a** 1, 3, 5, 7, ... 9, 11    **b** 1, 3, 6, 10, ... 15, 21    **c** 7, 14, 28, 56, ... 112, 224
- 15 Arrange , small to large :  $\cdot 3 + \cdot 8$  , 10% of 8 ,  $1 \div \frac{1}{4}$  ,  $3 \div 6 + 4$  ,  $\frac{709}{1000}$  ,  $\sqrt{16} \div 10$  ....4%
- $$\begin{aligned} \sqrt{16} \div 10 &= 0.4 & \frac{709}{1000} &= 0.709 & 10\% \text{ of } 8 &= 0.8 & \cdot 3 + \cdot 8 &= 1.1 & 1 \div \frac{1}{4} &= 4 & 3 \div 6 + 4 &= 4.5 \end{aligned}$$



## Answers :

- 1 Added / Subbed : a 310 b 3758 ..... 48 answers x 2% each
- 2 Timesed / Divided : a 7215 b 702  
c 1027992 d  $312\frac{8}{19}$
- 3 Ordered : a 4 b 8 c 7 d 1
- 4 Fractionated : a  $\frac{7}{10}$  b  $\frac{61}{1000}$  c  $\frac{9}{100}$
- 5 Decimated : a 0.73 b 0.07 c 0.25
- 6 Percenticated : a 90% b 20% c 60%
- 7 Amounted : a \$1.08 b 20 kg
- 8 Grouped : a 84 b 4
- 9 Decimated : a 13.02 b 18.3 c 0.06  
d 30 e 3.125 f 200
- 10 Fractioned : a  $11\frac{6}{7}$  b  $\frac{5}{8}$  c  $\frac{6}{35}$   
d  $5\frac{5}{6}$  e  $\frac{10}{21}$  f  $2\frac{1}{6}$
- 11 Reciprocated : a  $\frac{1}{3}$  b  $\frac{2}{3}$  c  $\frac{10}{9} = 1\frac{1}{9}$  d 2
- 12 HCF , LCM : a  $45 = 3^2 \times 5$  and  $60 = 2^2 \times 3 \times 5$   
b HCF =  $3 \times 5 = 15$  and c LCM =  $2^2 \times 3^2 \times 5 = 180$
- 13 Worded : a  $50 + 4 = 54$  b 3017 *in numerals*  
c *in expanded form ...*  $6395 = 6 \times 10^3 + 3 \times 10^2 + 9 \times 10 + 5$
- 14 Patterned : a 9 , 11 b 15 , 21 c 112 , 224
- 15 Arranged :  $\sqrt{16} \div 10 = 0.4$  ,  $\frac{709}{1000} = 0.709$  , 10% of 8 = 0.8 ,  $.3 + .8 = 1.1$  ,  $1 \div \frac{1}{4} = 4$  ,  $3 \div 6 + 4 = 4.5$  .....4%

48 x 2% + 4%