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Mathematics Department

Homework Pack

Year 9

Module 9

Intermediate

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Name

Class Teacher

Name

Number

$\frac{\dots}{25} \times 100 = \dots\%$

1. Look at the following list of numbers

2 3 4 9 13 16 24 27 42 49

Using the above numbers only [5]

- a. List the odd numbers
- b. Multiples of 3
- c. Factors of 24
- d. Prime numbers
- e. Square numbers

2. List the first 10 multiples of [5]

- a. 9
- b. 12
- c. What is the lowest common multiple of 12 and 9

3. List all the factors of

- a. 24 [2]
- b. 30 [2]
- c. What is the highest common factor of 24 and 30 [1]

4. Write down [3]

- a. a square number between 40 and 60
- b. a prime number between 30 and 35
- c. a number that is both square number and a cube number ?

5. Use a calculator or otherwise

- a. $3^3 \times 2^2$ [2]
- b. 2^6 [1]
- c. $1^6 \times 4^3$ [2]

6. Using the figures 4, 7, 1, 2

- a. Write down the largest **odd** number using all 4 digits[1]
- b. Write down the smallest **even** number using all 4 digits[1]

To improve I need to

Name

Standard Form

$\frac{\dots}{15} \times 100 = \dots\%$

1.

a. Write 4 500 000 in standard form [1]

b. Write 20 million in standard form [1]

c. Write 0.004 in standard form [1]

d. Write 0.00056 in standard form [1]

2. Complete the following table [5]

a.

Planet / Sun	Diameter	
	Km	Standard Form
Sun	1392000	
Earth		1.27563×10^4
Mars	6794	
Jupiter	142984	
Pluto		2.39×10^3

3. Calculate the following values

a. $3400 + 250$ [1]

Write in standard form [2]

b. $5600 - 780$ [1]

Write in standard form [2]

To improve I need to

Name

Fractions

$\frac{\dots}{30} \times 100 = \dots\%$

1. Circle the biggest a. $\frac{1}{5}$ or $\frac{1}{3}$ [1] b. $\frac{1}{8}$ or $\frac{2}{10}$ [1]

2. Find the following
 - a. $\frac{1}{5}$ of 30 [1] c. $\frac{3}{8}$ of 24 [2]
 - b. $\frac{1}{7}$ of 42 [1] d. $\frac{5}{9}$ of 54 [2]

3. Complete the following to find the equivalent fractions [2]
 - a. $\frac{4}{5} = \frac{\dots}{10}$ b. $\frac{3}{8} = \frac{\dots}{24}$

4. Simplify the following fractions [4]
 - a. $\frac{14}{28} =$ b. $\frac{15}{40} =$

5. Solve the following [4]
 - a. $\frac{4}{10} + \frac{2}{10} = \dots$ b. $\frac{7}{9} - \frac{2}{9} = \dots$

6. Solve the following, simplify if necessary [6]
 - a. $\frac{3}{8} + \frac{2}{5} =$ b. $\frac{5}{6} - \frac{1}{4} =$

7. Calculate the following, simplify if necessary [3]
 - a. $\frac{4}{10} \times 5 =$ b. $\frac{5}{9} \times \frac{2}{5} =$

8. Find the following [3]
 - a. $32 \times 0.5 = \dots$ b. $14 \div 0.1 = \dots$ c. $64 \times 0.25 = \dots$

To improve I need to

Name

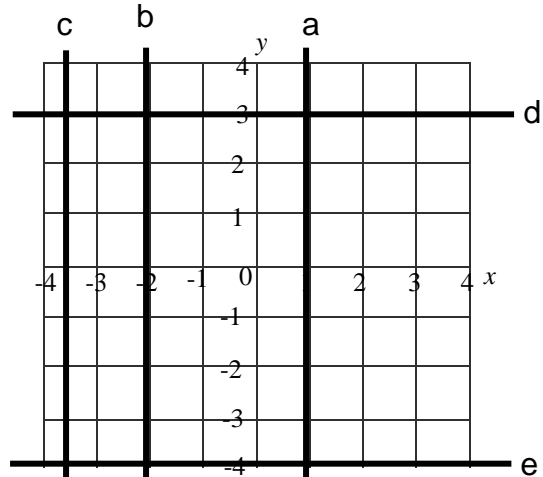
Straight Lines

$\frac{\dots}{25} \times 100 = \dots\%$

1. Write the names for these lines

[5]

- a. line **a** name is $x = \dots$
- b. Line **b** name is $\dots = \dots$
- c. Line **c** name is $\dots = \dots$
- d. Line **d** name is $y = \dots$
- e. Line **e** name is $\dots = \dots$

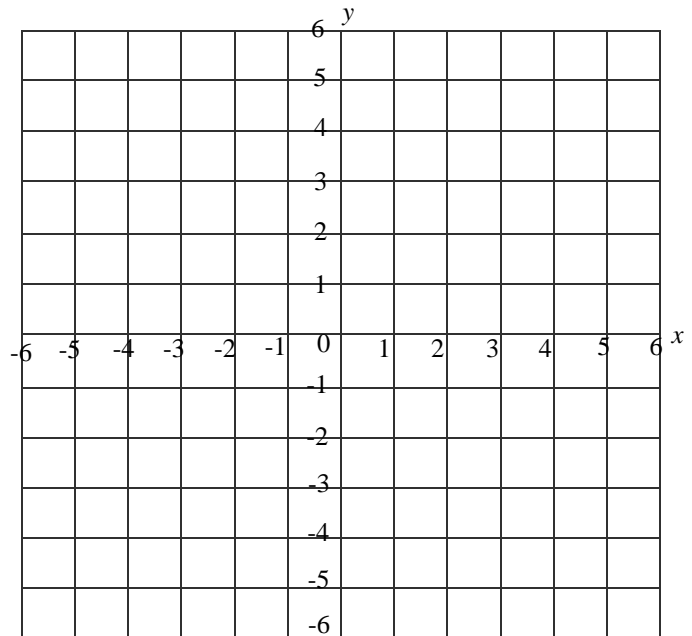


2. Draw the following lines

[5]

Label each line fully

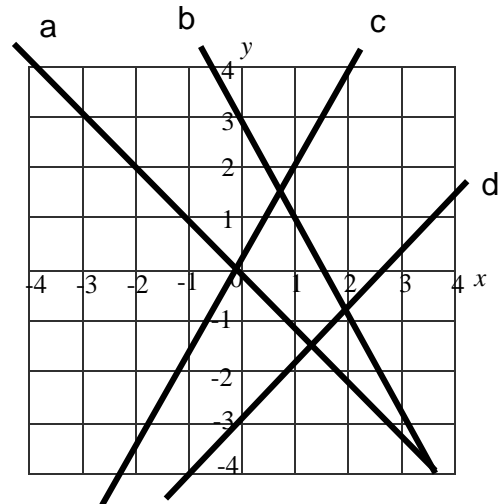
- a. $x = 4$
- b. $y = -3$
- c. $x = -6$
- d. $y = 5$
- a. $x = 0$



3. Match the line to the equation

[4]

- i. $y = -2x + 3$
- ii. $y = 2x$
- iii. $y = -x$
- iv. $y = x - 3$



4. Complete the tables and use the values from the tables plot the 3 lines.

Label each line clearly

a. $y = 2x$ [3]

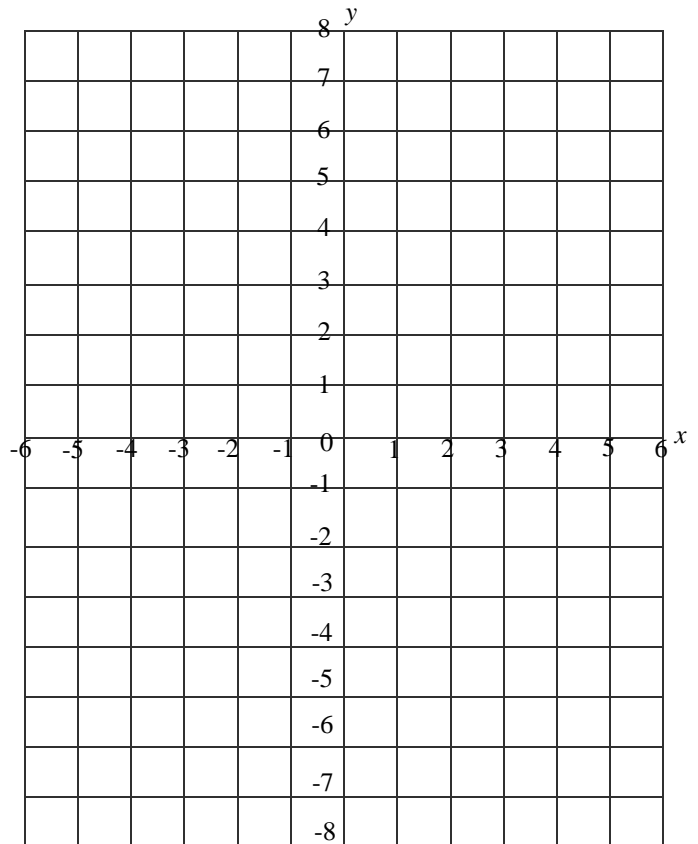
x	-4	-2	0	2	4
y	-8	-4	0		8

b. $y = x + 3$ [3]

x	-4	-2	0	2	4
y	-1		3	5	7

c. $y = x - 4$ [3]

x	-4	-2	0	2	4
y	-8	-6	-4		0



5. Circle the line which is parallel to $y = 2x + 2$ [1]

a. $y = 3x + 2$

b. $y = 2x - 4$

c. $y = x + 3$

6. Circle the line which crosses the y axis at $(0, 4)$ [1]

a. $y = 2x + 2$

b. $y = -4x + 3$

c. $y = 3x + 4$

To improve I need to

Name

Algebra

$\frac{\dots}{25} \times 100 = \dots\%$

1. Simplify the following

a. $3b + 7b$ [1]

b. $8a - 5a - a$ [1]

c. $4a + 5a + 6b + 2b$ [2]

d. $7a - 3a + 6b - 8b$ [2]

2. Use the following values and substitute into the expressions.

$a = 4$ $b = 3$ $c = -2$

a. $a + b + c$ [2] d. $3a + 2b$ [2]

b. $5c - b$ [2] e. a^2 [2]

c. $5b + 3c$ [2] f. $5b + 3c$ [2]

3. Solve the following

a. $x + 3 = 15$ [1] d. $x - 7 = 19$ [1]

b. $4x = 32$ [1] e. $\frac{x}{5} = 3$ [1]

c. $2x + 8 = 22$ [1] f. $4x - 6 = 8$ [1]

4. Expand the following.

a. $3(x + 4)$ [2] b. $4(2x - 3)$ [2]

5. Expand and Simplify

a. $3(x + 5) + 2(x + 4)$ [3]

To improve I need to

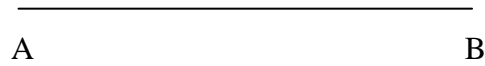
Name

Construction

$$\frac{\dots}{10} \times 100 = \dots\%$$

1.

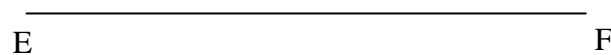
- a. Use a compass to 6cm equilateral triangle ABC, label fully [3]



- b. Bisect the Angle CAB using a compass (Show all your workings out) [3]

2.

- a. Draw the Perpendicular bisect of the line EF. [4]



To improve I need to

Name Numeracy-1

$$\frac{\dots}{25} \times 100 = \dots\%$$

ADDITION

NON CALCULATOR

1.

$$\begin{array}{r} 585 \\ + 268 \\ \hline \\ \hline \end{array}$$

2.

$$\begin{array}{r} 738 \\ + 589 \\ \hline \\ \hline \end{array}$$

3.

$$\begin{array}{r} 879 \\ + 686 \\ \hline \\ \hline \end{array}$$

4.

$$\begin{array}{r} 2905 \\ + 5736 \\ \hline \\ \hline \end{array}$$

5.

$$\begin{array}{r} 7968 \\ + 8364 \\ \hline \\ \hline \end{array}$$

6.

$$\begin{array}{r} 4334 \\ + 7777 \\ \hline \\ \hline \end{array}$$

SUBTRACTION

NON CALCULATOR

7.

$$\begin{array}{r} 653 \\ - 64 \\ \hline \\ \hline \end{array}$$

8.

$$\begin{array}{r} 354 \\ - 86 \\ \hline \\ \hline \end{array}$$

9.

$$\begin{array}{r} 700 \\ - 48 \\ \hline \\ \hline \end{array}$$

10.

$$\begin{array}{r} 803 \\ - 476 \\ \hline \\ \hline \end{array}$$

11.

$$\begin{array}{r} 606 \\ - 388 \\ \hline \\ \hline \end{array}$$

12.

$$\begin{array}{r} 967 \\ - 359 \\ \hline \\ \hline \end{array}$$

2 Marks each Question, 1 Mark for Working Out

To improve I need to

Name

Numeracy- 2

.....%

NON CALCULATOR Complete the multiplication grid

X	3	11	4	5	8	7	9	10	6	12
4										
11										
8										
3										
6										
7										
12										
10										
9										
5										

Name

Numeracy-3

$$\frac{\dots}{25} \times 100 = \dots\%$$

MULTIPLICATION

1.

$$\begin{array}{r} 87 \\ \times 6 \\ \hline \\ \hline \end{array}$$

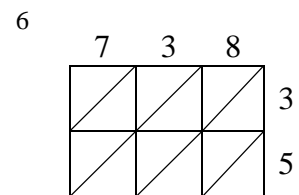
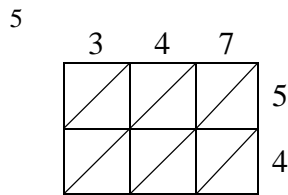
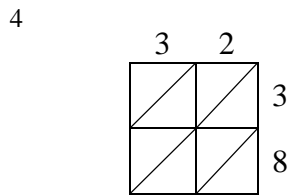
2.

$$\begin{array}{r} 567 \\ \times 8 \\ \hline \\ \hline \end{array}$$

NON CALCULATOR

3.

$$\begin{array}{r} 758 \\ \times 9 \\ \hline \\ \hline \end{array}$$



7.

$$4 \overline{) 764}$$

8.

$$7 \overline{) 386}$$

9.

$$9 \overline{) 549}$$

10.

$$5 \overline{) 3275}$$

11.

$$7 \overline{) 3129}$$

12.

$$12 \overline{) 420}$$

2 Marks each Question, 1 Mark for Working Out

To improve I need to

Name

Numeracy-4

$$\frac{\dots}{15} \times 100 = \dots\%$$

You can use a calculator to answer the following

1. A local supermarket advertises Photo Printing

Charges are one payment of 70p plus 3p per photograph

a. Sian prints 65 photographs, calculate how much she will have to pay. [3]

.....
.....

b. Bob pays £1.66 including the 70p payment

How many photographs does Bob get? [3]

.....
.....

2. A classroom has an **area of 63m²**, John goes to two different carpet shops and gets the following prices

‘Carpets are us’ Green Twirl @ £12.99 m²

‘Carpets for you’ Green Twist @ £15.95 m²

a. Calculate the Cost of both Carpets [4]

‘Carpets are us’

‘Carpets for you’

b. Which is the cheapest and by how much? [2]

.....
.....

3. 80,102 spectators watched the 100m final of the Olympics. If the ticket sales were £3,524,488 for the event , what was the average cost of a ticket? [3]

.....

To improve I need to