

Holyhead High School Ysgol Uwchradd Caergybi

Mathematics Department Homework Pack

Year 9 Module 10 Intermediate

Topic	Page	Date	Mark %	Comments / To Improve
Money	1 - 2	.....	.....	..........
Inequalities	3 -4	.....	.....	..........
Probability	5 – 6	.....	.....	..........
Trial and Improvement	7	.....	.....	..........
Numeracy 1	8	.....	.....	..........
Numeracy 2	9	.....	.....	..........

Name

Class Teacher

Name

Money

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

1. Kate has a £20 note. A notebook costs £1.60.
 She buys as many notebooks as she can. How much money will she have left over? [3]

.....

2. A ring is bought for £354. It is then sold for a profit of 24%.
 Calculate the selling price of the ring. [3]

.....

3. What percentage is £150 of £600? [2]

.....

4. ^{8.}

Cash Price
 £1240

Dining Table
 and
 4 Chairs



Hire Purchase Price
 Deposit: 15% of Cash Price
 + 36 monthly payments of £42

- Calculate the total hire purchase price. [4]

.....

5. Sian invests £7000 at 4% compound interest.
 a. Find the interest earned at the end of the year. [2]

.....

- b. How much did Sian have in her account at the end of the year [1]

.....

- c. Sian kept all her money in the bank for another year, how much did she have at the end of the second year ?

..... [2]

6. a. Lewis changed £1500 into Australian dollars (\$), when the rate of exchange was £1 = \$2.24. How many Australian dollars did he get? [2]

.....

b. On his return he had \$120 left.
 How much would he get for these in pounds (£) if the exchange rate is £1 = \$2.27? [2]

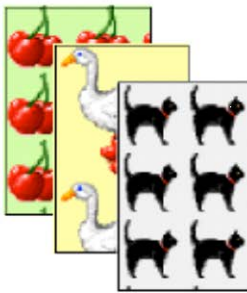
.....

7.

**POSTERS
BY POST**

All posters
£ 2.75 each

postage and
packing extra



Posters cost £2.75 each
 You have to pay postage and packing charges as well.
 These are:

Postage and packing	
1 to 10 posters	£3.25
11 to 20 posters	£6.00
21 to 30 posters	£8.75
over 30 posters	£11.50

Zeke has £50

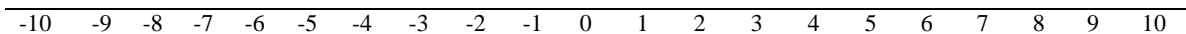
How many posters can he get by post if he spends £50?

..... [4]

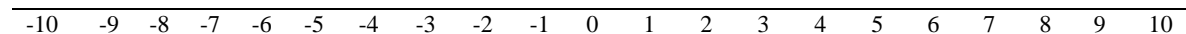
1. Plot the following on a number lines

[4]

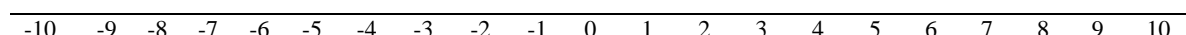
a. $x > 5$



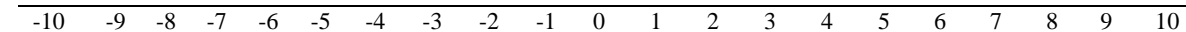
b. $x \leq -2$



c. $-4 < x \leq 3$



d. $-10 \leq x \leq 3$



2. Solve these inequalities

[4]

a. $x + 5 > 7$

b. $x - 7 \leq 1$

c. $\frac{x}{4} \geq 8$

d. $8x < 16$

3. Write down all the integer (whole number) values of x that satisfy the following inequalities [8]

a. $3 < x < 7$

b. $-2 \leq x < 1$

c. $-7 \leq x \leq -3$

d. $-2 < x \leq 3$

4. On graph paper, draw the region which satisfies all of the following inequalities. [5]

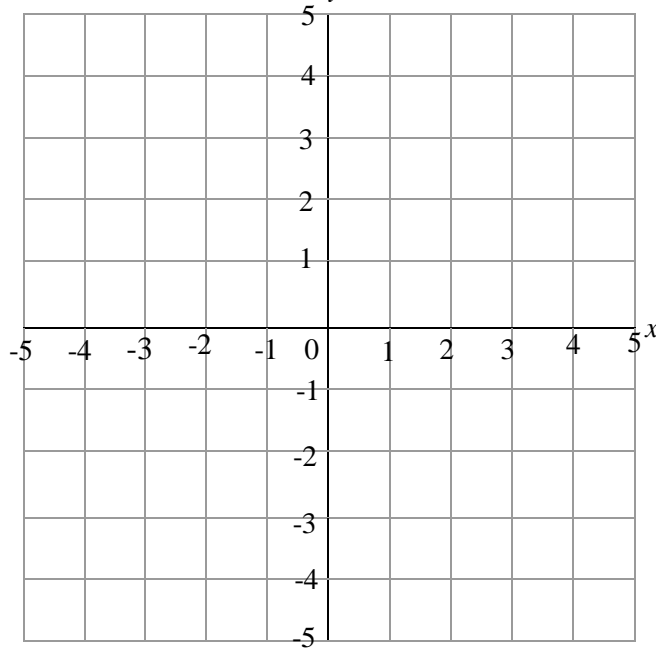
$$x \leq 4$$

$$y \geq -1$$

$$x \geq -2$$

$$y \leq 3$$

Make sure that you clearly indicate the region that represents your answer.



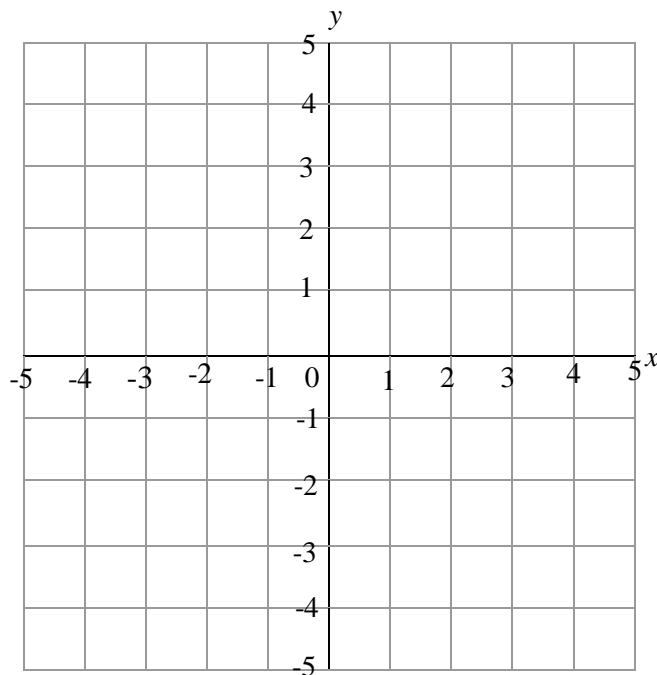
5. On graph paper, draw the region which satisfies all of the following inequalities. [4]

$$x \geq -3$$

$$y \leq 5$$

$$y \leq x$$

Make sure that you clearly indicate the region that represents your answer.

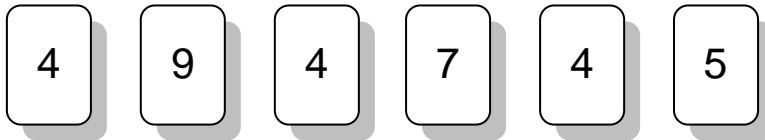


Name

Probability

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

1.



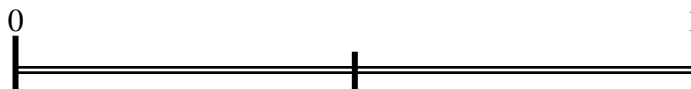
One card is chosen at random from the six cards shown above.

Mark the positions of P, Q and R on the probability scale given below, where

P is the probability of the number on the card being 4,

Q is the probability of the number on the card being less than 10,

R is the probability of the number on the card being greater than 8. [3]



2. There are 8 counters in a box numbered 1,2,3,4,5,6,7 and 8. If one counter is drawn out at random, what is the probability that is it a counter. [4]

a. With an odd number?

b. With a square number?

c. With an even number?

d. That is not a 8?

3. During the summer holidays, the probability that Mr Jones goes to the seaside for his holidays is 0.3, the probability that he goes to the countryside is 0.35, the probability that he goes to a city is 0.25, What is the probability that he stays at home? [2]

4. Edward is asked to throw a dice 600 times for homework and record each number.

No. on dice	1	2	3	4	5	6	Total
Frequency	97	121	101	102	81	98	600

a. Comment on whether you think the coins are fair? [2]

.....
.....

b. If Edward throws a **fair** dice 1200 times, how many times should he expect to get a score of 3 ? [2]

Name

Trial and Improvement

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

1. A solution of the equation $x^3 = 52$ between $x = 3$ and $x = 4$.

a. Complete the following table

x	$x^3 = 52$	too big / too small ?
3.5	$3.5^3 = 42.875$	
3.6		
3.7		
3.8		
3.75		

b. Give your answer correct to one decimal place. [5]

2. A solution of the equation $x^2 - 5x + 6 = 0$ between $x = 2$ and $x = 3$.

a. Complete the following table

x	$x^2 - 5x + 6 = 0$	too big / too small ?
2.5	$2.5^2 - 5 \times 2.5 + 6 = -0.25$	

b. Give your answer correct to one decimal place. [5]

Name

Numeracy - 1

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

Mavis lives and works in Swandeen.

Last Tuesday she took her 12 year old son and 10 year old daughter to the cinema in the nearby town of Ringtree.

Mavis was working until 4 p.m. on that day and the film they saw started at 5:30 p.m.

Part of the bus timetable between the two places is shown below.

Swandeen to Ringtree				
Swandeen	15:00	17:00	19:00	21:00
Ringtree	15:50	17:50	19:50	21:50

Ringtree to Swandeen				
Ringtree	16:00	18:00	20:00	22:00
Swandeen	16:50	18:50	20:50	22:50

Give **full** details of why they were not able to make use of the bus service to get to Ringtree [2]

.....
.....

They travelled from Swandeen to Ringtree, a distance of 20 miles, by taxi.

The taxi firm uses the following formula to decide how much to charge,

charge = number of miles × 50p + fixed amount.

The fixed amount is £3 for all journeys.

Calculate the charge for the taxi journey from Swandeen to Ringtree. [2]

.....
.....

The taxi completed the 20 mile journey at an average speed of 40 mph (miles per hour).

Calculate the difference between the time taken by the taxi and the time taken by the bus. [3]

.....
.....
.....

Mavis and the children took the bus home.

The adult fare from Ringtree to Swandeen is £3.35.

The fare for 5 to 16 year-olds is £1.80.

Calculate the difference between the cost of the taxi to the cinema and the cost of the bus to go home. [3]

.....
.....
.....

Name

Numeracy - 2

$$\frac{\dots}{16} \times 100 = \dots\%$$

Last December, a company set up an outside ice rink in the town centre.
The rectangular ice rink has a length of 20 metres and a width of 15 metres.
The company has to allow 4 square metres for every skater on the ice rink.
What is the maximum number of skaters allowed on the ice rink at any time?

[4]

.....
.....
.....
.....

All the skaters are allowed 30-minute time slots on the ice.
The first time slot is from 10:00 a.m. until 10:30 a.m.
The second time slot is from 10:30 a.m. until 11:00 a.m.
All the other time slots start immediately after the previous time slot finishes.
The last time slot ends at 10:00 p.m.

What is the maximum number of skaters that could use the ice rink on any day?

[4]

.....
.....
.....
.....

The numbers of skaters who attended on Saturdays and Sundays during December are displayed in the following table.

	Sun Dec 1 st	Sat Dec 7 th	Sun Dec 8 th	Sat Dec 14 th	Sun Dec 15 th	Sat Dec 21 st	Sun Dec 22 nd	Sat Dec 28 th	Sun Dec 29 th
Children	576	444	486	505	529	794	567	624	785
Adults	554	468	594	661	683	633	468	920	869

What percentage of the total available places were filled on Sunday, 29th December?
Give your answer correct to the nearest whole number.

[4]

.....
.....
.....
.....

What is the mean and range of the number of **children** who skated, per day, on Saturdays and Sundays during December?

[4]

.....
.....
.....
.....

Mean - Sat

Range - Sat

Mean - Sun

Range - Sun