"BETWEEN PAPERS" PRACTICE

SET 1 OF 1 (HIGHER ONLY)

SUMMER 2018

QUESTIONS

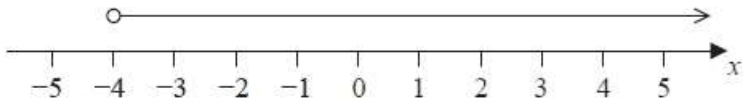
NOT A "BEST" GUESS PAPER.

NEITHER IS IT A "PREDICTION" ... ONLY THE EXAMINERS KNOW WHAT IS GOING TO COME UP! FACT! YOU ALSO NEED TO REMEMBER THAT JUST BECAUSE A TOPIC CAME UP ON PAPER 1 OR PAPER 2 IT MAY STILL COME UP ON PAPER 3 ...

WE KNOW HOW IMPORTANT IT IS TO PRACTICE, PRACTICE, PRACTICE .... SO WE'VE COLLATED A LOAD OF QUESTIONS THAT WEREN'T EXAMINED IN THE PEARSON/EDEXCEL 9-1 GCSE MATHS PAPER 1 OR PAPER 2 BUT WE CANNOT GUARANTEE HOW A TOPIC WILL BE EXAMINED IN THE NEXT PAPERS ...

ENJOY!
MEL & SEAGER

Q1.



(a) Write down the inequality represented on the number line.

(1)

(b) Solve $4y - 9 \leq 3$

(2)

(c) $-3 \leq n < 2$
$-2 < m < 4$

n and m are integers.

Given that $n = m$, write down all the possible values of n.

(2)

Q2. Express the recurring decimal $0.7\dot{5}\dot{0}$ as a fraction.

(3)

Q3. Using the information that

$$6.7 \times 52 = 348.4$$

find the value of

(i) 6.7×520

(ii) 67×0.52

(iii) $3484 \div 5.2$

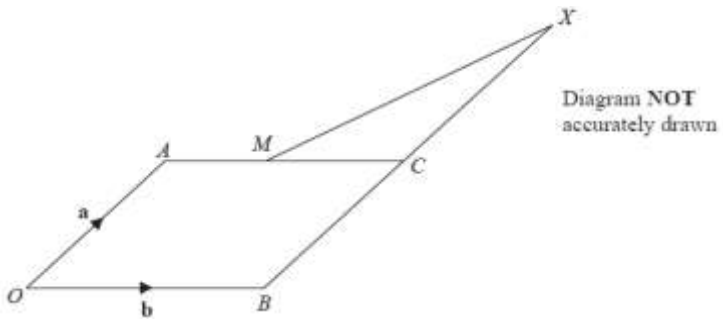
(3)

Q4. *OACB* is a parallelogram.

M is the midpoint of *AC.*
C is the midpoint of the straight line *BCX*.

$\overrightarrow{OA}$ = **a** $\overrightarrow{OB}$ = **b**

Prove that *OMX* is a straight line.



(4)

Q5. Jeff is choosing a shrub and a rose tree for his garden.

At the garden centre there are 17 different types of shrubs and some rose trees.

Jeff says,

"There are 215 different ways to choose one shrub and one rose tree."

Could Jeff be correct?
You must show how you get your answer.

(2)

Q6. (a) Show that the equation $x^3 + 7x - 5 = 0$ has a solution between $x = 0$ and $x = 1$

(2)

(b) Show that the equation $x^3 + 7x - 5 = 0$ can be arrange to give $x = \frac{5}{x^2 + 7}$

(2)

(c) Starting with $x_0 = 1$, use the iteration formula $x_{n+1} = \frac{5}{x_n^2 + 7}$ three times to find an estimate for the solution of $x^3 + 7x - 5 = 0$

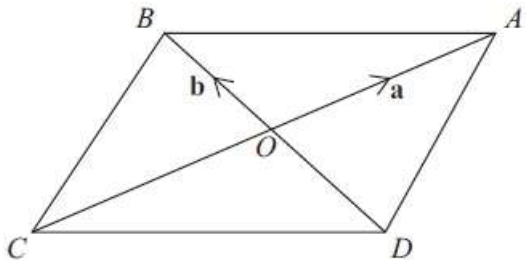
(3)

(d) By substituting your answer to part (c) into $x^3 + 7x - 5$,
comment on the accuracy of your estimate for the solution to $x^3 + 7x - 5 = 0$

(2)

Q7. *ABCD* is a parallelogram.
The diagonals of the parallelogram intersect at *O*.

$\overrightarrow{OA}$ = **a** and $\overrightarrow{OB}$ = **b**



(a) Write an expression, in terms of **a** and/or **b**, for

(i) $\overrightarrow{CA}$,

(ii) $\overrightarrow{BA}$,

(ii) $\overrightarrow{BC}$.

(3)

X is the point such that $\overrightarrow{OX}$ = 2**a** – **b**

(b) (i) Find an expression, in terms of **a** and **b**, for $\overrightarrow{AX}$.

(ii) B, A and X lie on the same straight line.
Explain why.

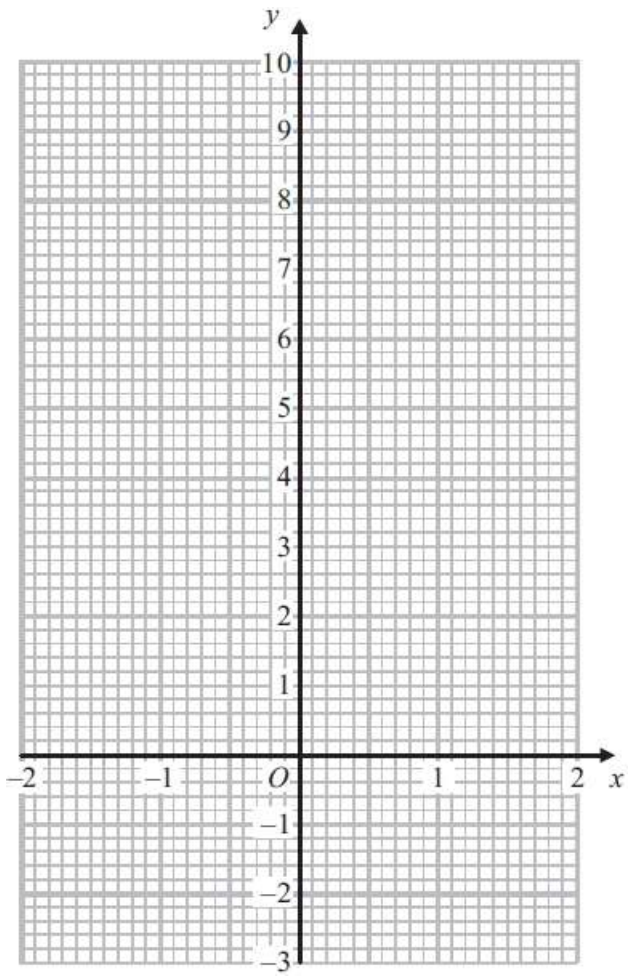
(3)

Q8. (a) Complete the table of values for $y = 2x^2 - 1$

x	-2	-1	0	1	2
y	7			1	

(2)

(b) On the grid below, draw the graph of $y = 2x^2 - 1$ for values of x from $x = -2$ to $x = 2$

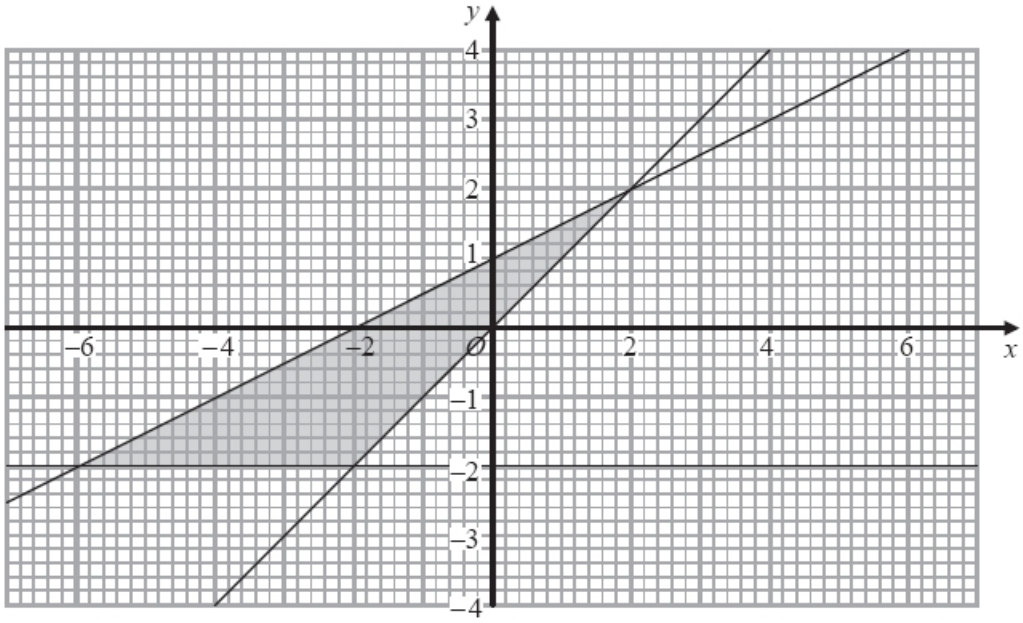


(2)

(c) Use your graph to write down estimates of the solutions of the equation $2x^2 - 1 = 0$

(2)

Q9.



Write down the three inequalities that define the shaded region.

(4)

Q10. S is a geometric sequence.

(a) Given that $(\sqrt{x}-1)$, 1 and $(\sqrt{x}+1)$ are the first three terms of S, find the value of x.

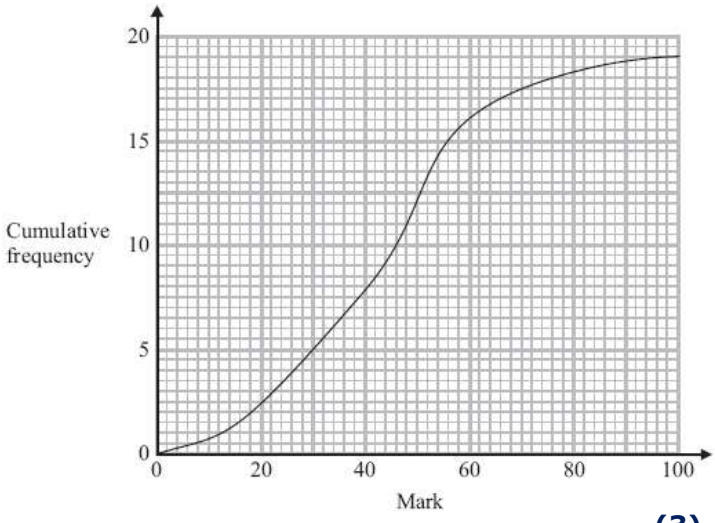
You must show all your working.

(3)

(b) Show that the 5th term of S is $7+5\sqrt{2}$

(2)

Q11. Mrs Angus's class did a maths test. The cumulative frequency graph shows information about their marks.



(a) Use the cumulative frequency graph to find

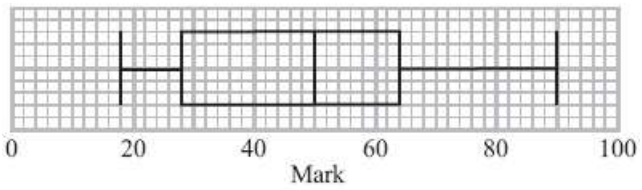
(i) the median,

(ii) the interquartile range.

(3)

Mr Wilson's class did the same maths test.

The box plot shows information about their marks.



*(b) Compare the interquartile range of the marks of Mr Wilson's class with the interquartile range of the marks of Mrs Angus's class.

(2)