

Please circle your Maths Teacher's initials: PRN, TJL, RDA, RSB

KING'S COLLEGE JUNIOR SCHOOL

LOWER REMOVES

MATHEMATICS EXAM

PAPER ONE

SUMMER 2010

Time: 1 hour

Name: _____

Please read this information before the examination starts

- All questions should be attempted.
- A _____ denotes a space for your answer
- A completely correct answer will receive **no** marks unless you show all your working.
- You may **not** use a calculator.
- Answers given as fractions should be reduced to their lowest terms.
- If you have time at the end, check your answers carefully.

1) Work out the following

a) The sum of 63.5 and 9.74

b) Tommy has a lump of clay of mass 11.5 kilograms.
He cuts off a piece of mass 3.79 kilograms.
What is the mass of the remaining clay?



c) Emily has a strip of paper which measures 1.7m by 0.25m.
What is the area of the paper?

d) $14.6 \div 0.25$

2) Showing all you working, work out the following:

a) Write 55% as a decimal

_____ (1)

b) Write $\frac{7}{25}$ as a decimal

_____ (2)

c) Write 0.85 as a fraction in lowest terms.

_____ (2)

d) Write $\frac{7}{8}$ as a decimal correct to two decimal places

_____ (2)

3) a) Write 324 as a product of prime factors, using indices.

_____ (3)

b) Hence or otherwise, calculate the square root of 324?

_____ (2)

4) Find the next two terms in each of the following sequences :

a) 14 , 11 , 8 , 5 , _____ , _____ (1)

b) 81 , 27 , 9 , 3 , _____ , _____ (1)

c) 2 , 4 , 7 , 11 , 16 , _____ , _____ (2)

d) $\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{5}$, _____ , _____ (2)

5) From the following list

4 8 9 29 32 36

choose one number which is

a) a prime number _____ (1)

b) a factor of 18 _____ (1)

c) a multiple of 18 _____ (1)

d) the square root of 16 _____ (1)

e) a cube number _____ (1)

6) Solve the following equations. You must show what has been done to both sides of the equation at each stage:

a) $a - 5 = -1$

b) $6(q + 1) = 18$

_____ (1)

_____ (2)

c) $\frac{2x}{3} = 8$

d) $3y - 2 = 7y + 10$

_____ (2)

_____ (3)

e) $3(2b + 4) = 40 - b$

_____ (3)

7) Work out the following, giving your answers in their lowest terms.

a) $\frac{2}{3} + \frac{1}{4}$

_____ (2)

b) $1\frac{1-3}{5-4}$

_____ (2)

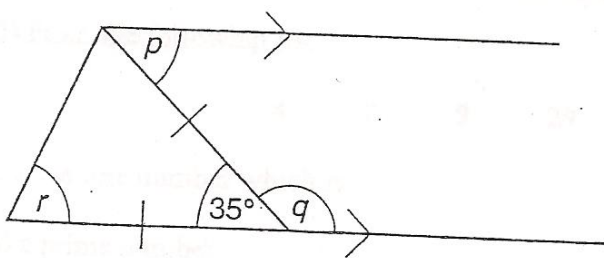
c) $\frac{16}{3} \times \frac{9}{8}$

_____ (2)

d) $\frac{15}{8} \div \frac{3}{5}$

_____ (2)

8) Calculate the size of each of the angles marked p, q and r.



not to scale

p = _____ ° (1)

q = _____ ° (1)

r = _____ ° (2)

9) If $a=3$, $b=-4$ and $c=-6$

Find the value of the following.

a) bc

_____ (2)

b) $\frac{ab}{c}$

_____ (2)

c) $a-b^2$

_____ (2)

d) $(a-b)^2$

_____ (2)

10) Work out the following :

a) Find 20% of £5.50

_____ (2)

b) Find $\frac{3}{8}$ of £18.00

_____ (2)

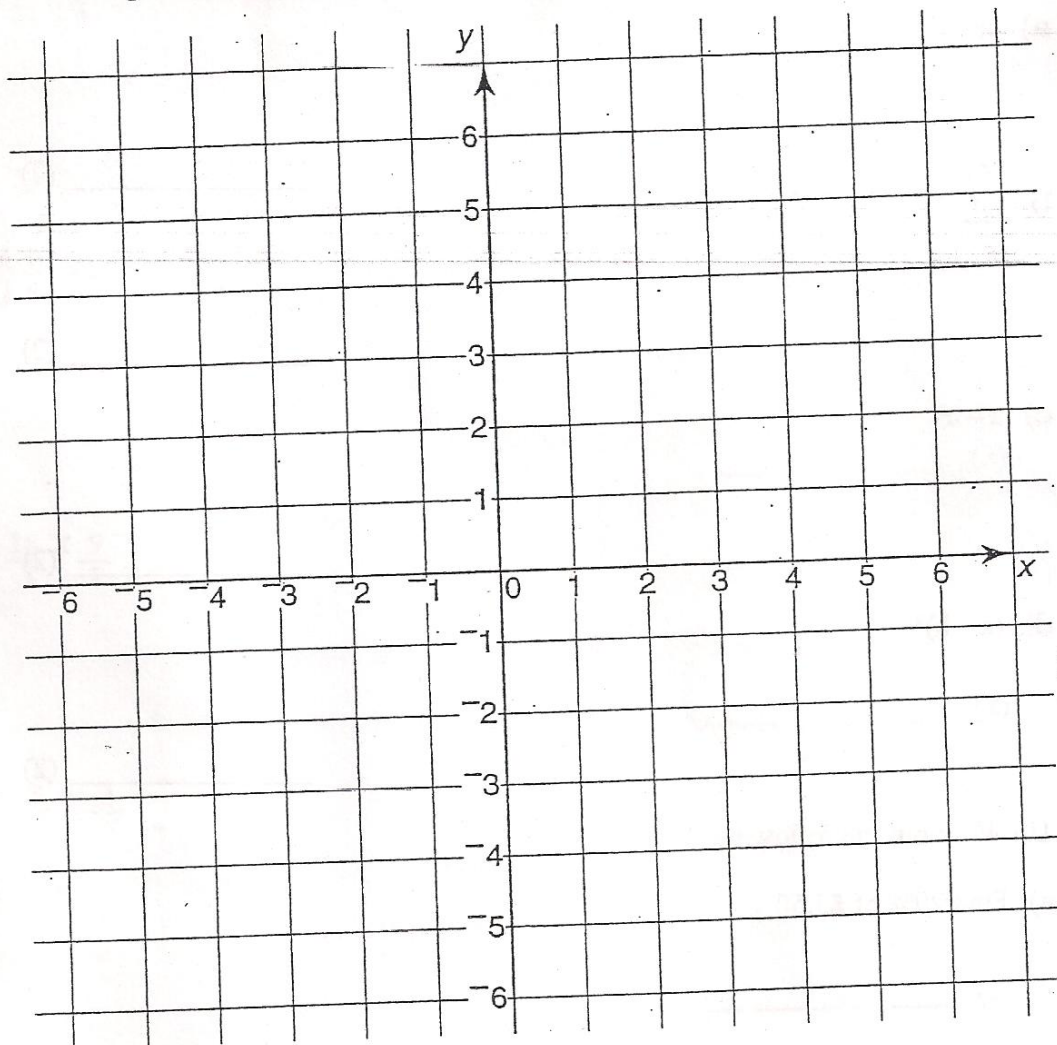
c) Express 1.25m as a percentage of 5 metres.

_____ (2)

11) i) On the grid below, plot the points $(1, 0)$, $(4, 1)$, $(6, 0)$ and $(3, -1)$

Join the points in order and label the shape A.

(2)



ii) What is the order of rotational symmetry of shape A?

_____ (1)

iii) Rotate shape A through 90° clockwise about the point $(-1, 3)$.
Label the image B.

(2)

iv) (a) Draw and label the line $y = x$

(1)

(b) Reflect shape A in the line $y = x$
Label the image C.

(2)

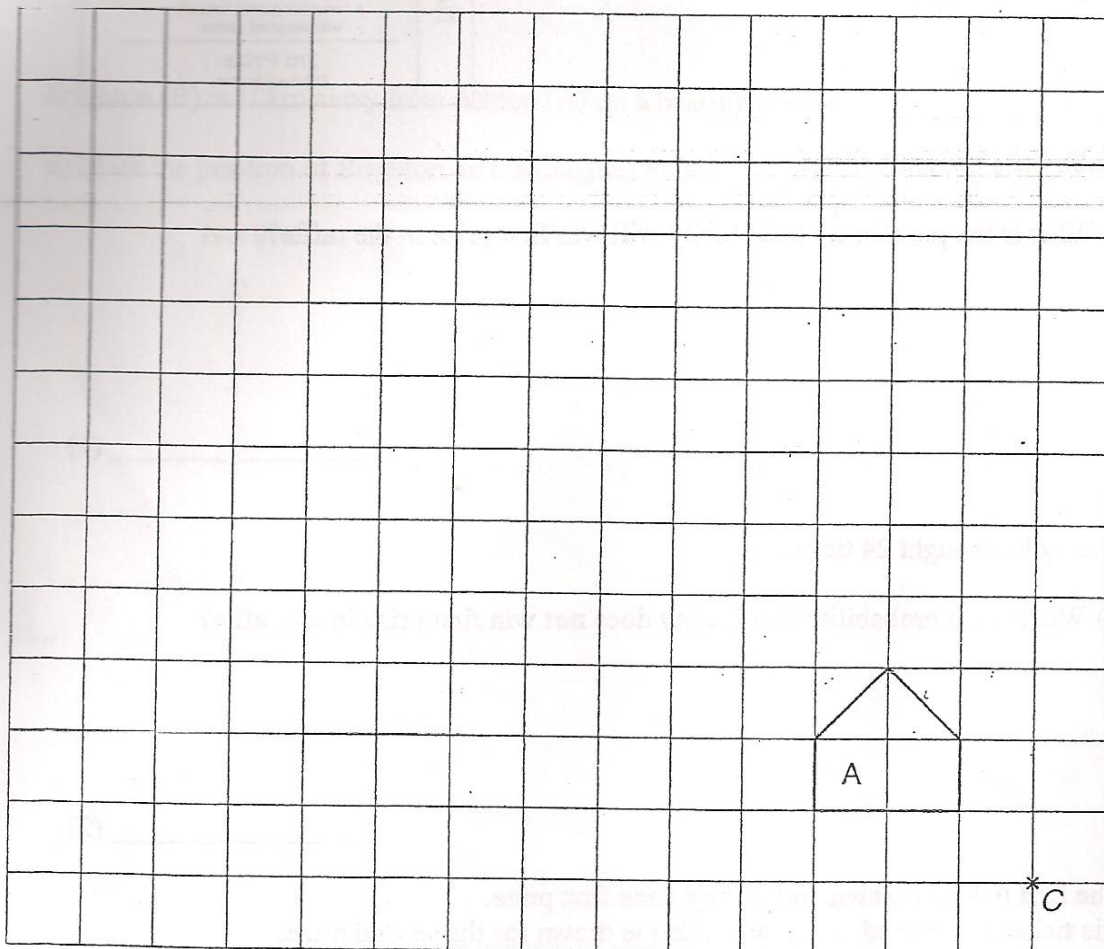
vii) Translate shape A by vector $\begin{pmatrix} -3 \\ -4 \end{pmatrix}$

Label the image D.

(2)

12) Polygon A is drawn on a centimetre square grid.

i) With centre C, enlarge polygon A by scale factor 3 and label the image B. (3)



ii) How many times longer is the perimeter of B than the perimeter of A?

_____ times (1)

iii) How many times larger is the area of B than the area of A?

_____ times (1)

iv) Find the area of polygon B.

_____ (2)

13) In a school raffle 160 tickets have been sold.

No. 101	School Raffle
	1st Prize 2 Tickets to see a West End show
	2nd Prize A computer games console with assorted games
	3rd Prize £50 book tokens

Bobby has bought 1 ticket.

i) What is the probability that Bobby will win first prize in the raffle?

_____ (1)

Danny has bought 24 tickets.

ii) What is the probability that Danny does not win first prize in the raffle?

_____ (2)

The first ticket is drawn and Bobby wins first prize.
His ticket is removed and a new ticket is drawn for the second prize.

iii) What is the probability that

a) Bobby will win second prize in the raffle?

_____ (1)

b) Danny will win second prize in the raffle?

_____ (1)

14) i) On a map with scale 1 : 100 000 what does 1cm represent in kilometres?

_____ (1)

Brighton (B) is 10km away from Albion (A) on a bearing of 075° .

ii) Mark the position of Brighton on the diagram below. Use a scale of 1 : 100 000.



(2)

iii) What is the bearing of Albion from Brighton?

_____ (2)

Coppell (C) is on a bearing of 120° from Albion and 215° from Brighton

iv) Mark the position of Coppell on your diagram. (3)

v) What is the distance from Brighton to Coppell?

_____ (2)
TOTAL MARKS : 100