The King's School
and
The Junior King's School
Canterbury

Entrance Examinations (12+) 2014

MATHEMATICS

45 minutes

INSTRUCTIONS

- Read each question carefully
- All working out must be shown on this paper in the spaces provided
- Marks WILL be awarded for neat and appropriate working
- Ensure that you leave time at the end to check your work
- **Where appropriate, remember to show the units of measurement in your final answer**
- The marks for each question are shown in brackets on the right of each page

CALCULATORS ARE NOT ALLOWED

NAME: .....

PRESENT SCHOOL: .....

Q1) Bert walks for 255 metres, jogs for 183 metres and then sprints for 75 metres. How far does he travel in total?

…….. (2 marks)

Q2) Betty has 2142 pieces of Lego but she loses 625 of them. How many pieces of Lego has she got left?

……..(2)

Q3) There are 1344 sweets to be shared between 3 children. How many sweets will each child receive?

……..(2)

Q4) Cyril wishes to buy 5 hamburgers priced at £2.95 each. How much will he have to spend?

……..(2)

Q5) Simplify the following:

(a) $3a + 5a - 2a$

..... (2)

(b) $5b - 2c + 3b + 2c$

..... (2)

(c) $3f \times 2f$

..... (2)

(d) $(4g)^2$

..... (2)

Q6) Calculate the following giving your answers in their lowest terms:

(a) $\frac{3}{4} + \frac{1}{6}$

.....(2)

(b) $\frac{5}{8} - \frac{1}{3}$

.....(2)

Q7) Work out the following:

(a) 2014 + 201.4 + 20.14

……..(2)

(b) 2014 – 201.4

……..(2)

(c) 20.1 × 0.4

……..(3)

Q8) Multiply out the brackets:

(a) 3(2a + 5)

……..(2)

(b) −4(3d + 2e)

……..(2)

Q9) In the following list, circle the prime numbers and underline the square numbers:

36 57 59 64 71 81 83 85 93 97

(4)

Q10) Convert $\frac{7}{25}$ into a decimal

……(2)

Q11) Convert 0.45 into a fraction given in its lowest terms

……(2)

Q12) Convert $\frac{7}{40}$ into a percentage

……(2)

Q13) Insert the correct operation signs (+ - × or ÷) and brackets to make the following calculations correct. Signs and brackets may be used more than once:

(a) 9 6 3 = 27 (2)

(b) 8 2 8 2 = 32 (2)

Q14) Find the median of these numbers:

4 6 1 7 9 5 8 4 2 3 6

……(2)

Q15) Solve the equation $3n + 4 = 34$

……(2)

Q16) Andy is 5 years younger than his sister. The sum of their ages is 29. Find Andy's age.

……(2)

Q17) Write the following numbers as products of their prime factors, using indices where appropriate:

(a) 45

……..(3)

(b) 60

……..(3)

Q18) Find the lowest common multiple of 45 and 60 (*hint - it may help to use your answers to Q17*).

……..(3)

Q19) Factorise the following expressions:

(a) $3x + 9$

……..(2)

(b) $12a + 24ab + 8a^2$

……..(2)

Q20) Calculate the following:

(a) $\frac{7}{10}$ of £120

……..(2)

(b) 35% of £120

……..(2)

Q21) Bert scores 85% in an exam having gained a total of 34 marks. How many marks would Bert have scored hag he got all of the questions in the exam correct (in other words, if he had scores 100%)?

……(2)

TOTAL = 70 MARKS