BEYOND MATHS

PRIMARY SCHOOL CHALLENGE 2016

LEVEL 1 CHALLENGE
GRADE 4 AND 5 ROUND ONE

INSTRUCTIONS

1. The time allocated for this paper is 1 hour.
Under no circumstances may extra time be given.

2. This paper consists of 20 multiple choice questions.
Each question only has one correct answer.

3. Question 1 – 15 are worth 1 mark each.
Question 16 – 20 are worth 2 marks each.

4. Negative marking will not be applied.

5. Calculators (and other calculating devices) and geometry instruments are not allowed.

6. Figures are not necessary drawn to scale.

7. Answer all questions on the answer sheet provided.

8. Circle the letter you have chosen as your answer in pen.

9. Should you wish to change an answer, put a cross over the letter and then circle your new chosen letter.

10. Paper may be used for rough working.

1. Which square is a quarter shaded?

(A)  (B)  (C)  (D)  (E) 

2. Harry owes Sally R48 and Sally owes Harry R55. Which statement means the same thing?

(A) Harry owes Sally R7 (B) Harry owes Sally R103 (C) Sally owes Harry R7 (D) Sally owes Harry R103 (E) Sally owes Harry R14

3. Sanjeev plants ten trees every three minutes. If he continues planting at the same rate, how long will it take him to plant 2500 trees?

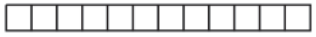
(A) $1\frac{1}{4}$ hrs (B) 3 hrs (C) 10 hrs (D) 11 hrs (E) $12\frac{1}{2}$ hrs

4. Tuesday's high temperature was $4°C$ warmer than that of Monday's. Wednesday's high temperature was $6°C$ cooler than that of Monday's.

If Tuesday's high temperature was $22°C$, what was Wednesday's high temperature?

(A) $32°C$ (B) $24°C$ (C) $12°C$ (D) $10°C$ (E) $8°C$

5. If $\frac{1}{2}$ of $\frac{2}{3}$ of the twelve squares in the figure below are removed, how many squares will remain?



(A) 2 (B) 3 (C) 4 (D) 6 (E) 8

6. Consider the 5 numbers below:

0,261 2,106 0,106 2,016 0,0612

The difference between the largest and the smallest of these numbers is

(A) 0,09 (B) 1,845 (C) 0,1998 (D) 1,9548 (E) 2,0448

7. Thabo solved the division problem below. Which expression could be used to check his answer?

$$15\overline{)2016} \quad 134 \text{ remainder } 5$$

(A) $(134\times15)+5$ (B) $(134\times5)+15$ (C) $(134+15)\times5$ (D) $(134+5)\times15$ (E) $(134\div15)\times5$

8. Sonja's bicycle has a front wheel and a back wheel of different sizes. The front wheel advances 4 metres per revolution, and the back wheel advances 3 metres per revolution.
Which statement accurately describes Sonja's 6 kilometre trip from home to school?

(A) The front wheel makes 2000 revolutions.

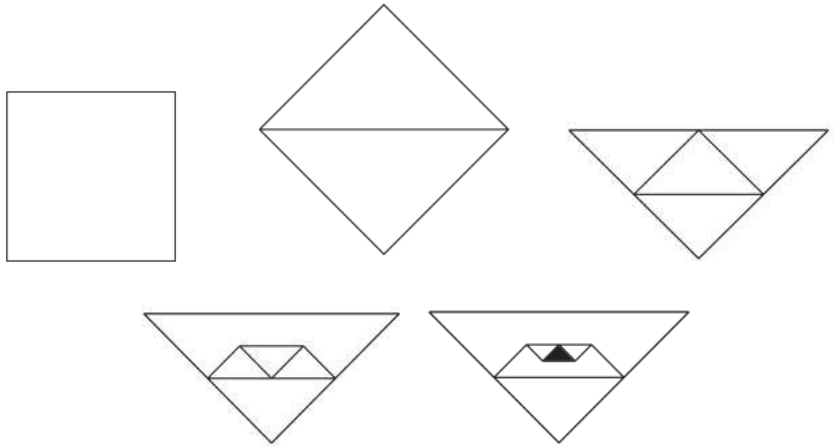
(B) The front wheel and the back wheel make the same number of revolutions.

(C) The front wheel makes 1.5 times the number of revolutions of the back wheel.

(D) The front wheel makes 500 revolutions less than the back wheel.

(E) The back wheel makes 300 revolutions less than the front wheel.

9. A square piece of paper is folded in the following ways:



What fraction of the original piece of paper is shaded?

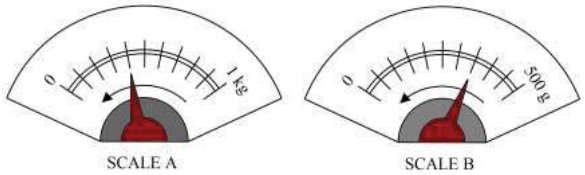
(A) $\frac{1}{256}$ (B) $\frac{1}{128}$ (C) $\frac{1}{64}$ (D) $\frac{1}{48}$ (E) $\frac{1}{32}$

10. Which of the following is the number of seconds in a week?

(A) $60\times60\times24\times7$ (B) 3600×7 (C) 500000

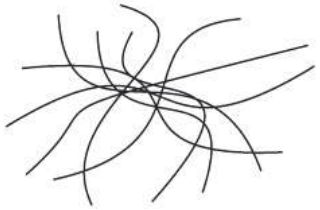
(D) $60+60+24+7$ (D) $60\times60\times48\times3$

11. Two different scales are pictured below with their weights as shown.
What is the difference in the weights between the two scales?



(A) 250g (B) 200g (C) 150g (D) 100g (E) 50g

12. A piece of string is cut a certain number of times to form the jumbled mess of smaller pieces shown below. The number of times that the string was cut is

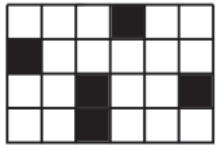


(A) 10 (B) 9 (C) 8 (D) 7 (E) 6

13. You have one hour to complete this paper. After 35 minutes, what fraction of your time remains?

(A) $\frac{1}{2}$ (B) $\frac{5}{12}$ (C) $\frac{7}{12}$ (D) $\frac{1}{3}$ (E) $\frac{1}{4}$

14. Some of the squares in the rectangle are shaded alongside. More squares need to be shaded so that the number of shaded squares is half the number of unshaded squares.

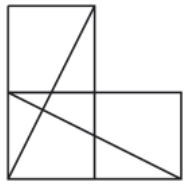


The number of additional squares which need to be shaded are

(A) 3 (B) 4 (C) 6 (D) 8 (E) 11

15. In the game 'SQUARES and TRIANGLES', 2 points are given for each triangle (of any size) and 3 points for each square.

The highest number of points that can be awarded for the figure below is

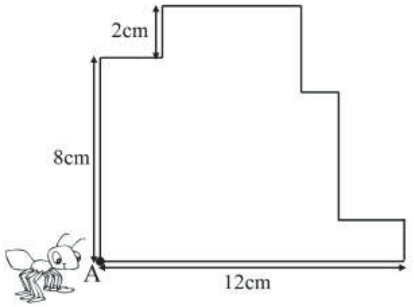


(A) 39 (B) 36 (C) 33 (D) 30 (E) 29

16. Thandi earned a mark of 87, 83 and 88 in her first three Mathematics tests respectively. If she scored 90 in her fourth test, then her average will

(A) increase by 4 (B) increase by 3 (C) increase by 2 (D) increase by 1 (E) remain the same

17. An ant walks around the edge of the decagon (10 sides) from point A and back again as shown below. All adjacent sides of the decagon meet at right angles. How far will the ant walk?

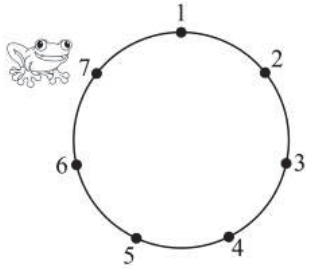


(A) 22 cm (B) 32 cm (C) 34 cm (D) 44 cm (E) 50 cm

18. Square pieces of sides 0,5 cm are cut from a sheet which is 10 cm long and 2 cm wide. What is the total number of squares that can be cut?

(A) 100 (B) 80 (C) 60 (D) 40 (E) 20

19. The points on a circle are numbered from 1 to 7. A frog jumps in a clockwise direction from one point to another around the circle. If it is on an odd numbered point, it moves one point. If it is on an even numbered point, it moves two points. If the frog starts at point 7, after 2016 jumps it will be on point



(A) 7 (B) 6 (C) 5 (D) 4 (E) 1

20. If A, B and C are digits for which

$$\begin{array}{rccc} & 7 & A & 2 \\ - & 4 & 8 & B \\ \hline & C & 7 & 3 \end{array}$$

then A + B + C =

(A) 14 (B) 15 (C) 16 (D) 17 (E) 18