

# SA Mathematics Challenge 2015

## GRADE 5 FINAL ROUND

### 29 July 2015

#### NOTE:

- Answer the questions according to the instructions on the answer sheet.
- You may use a calculator.
- The questions test insight. Complex calculations will therefore not be necessary.
- We hope you enjoy it!

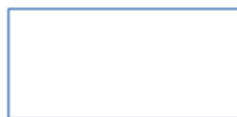
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1. Lihle baked 125 muffins, which is 18 more than Jane baked. How many muffins did Jane bake?

- (A) 113      (B) 102      (C) 107      (D) 97      (E) 143

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2. The perimeter of this figure is 56 cm. The length is 8 cm. What is the breadth of the figure?



- (A) 48 cm      (B) 8 cm      (C) 6 cm      (D) 20 cm      (E) 12 cm

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3. If we add two odd numbers, the answer is

- (A) sometimes odd  
(B) sometimes even  
(C) always even  
(D) sometimes even and sometimes odd  
(E) always odd

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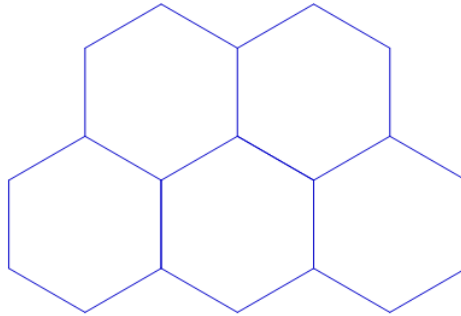
4. Naledi throws an ordinary dice. What is the probability that the dice will fall on an even number?



- (A)  $\frac{1}{2}$       (B)  $\frac{1}{6}$       (C)  $\frac{1}{3}$       (D)  $\frac{1}{4}$       (E)  $\frac{5}{6}$



5. The side length of each regular hexagon in the diagram below is 1 cm. What is the perimeter of the figure formed from these hexagons?



- (A) 23 cm      (B) 20 cm      (C) 18 cm      (D) 17 cm      (E) 16 cm
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6. The turtle at a zoo weighs 145 kilograms and is five times as heavy as the baby turtle. How much does the baby turtle weigh?
- (A) 725 kg      (B) 21 kg      (C) 150 kg      (D) 29 kg      (E) 49 kg
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7. A workman is moving 40 panes of glass. He gets paid R2 for each pane he moves. However, if he breaks a pane, he must pay R8 instead of getting R2. If his total pay is R60, how many panes did he break?
- (A) 1      (B) 2      (C) 3      (D) 4      (E) 5
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8. An island has no currency; it instead has the following exchange rate:
- 50 bananas = 10 coconuts  
30 coconuts = 10 fish  
100 fish = 1 tent
- How many bananas equal 1 tent?
- (A) 1 500      (B) 1 000      (C) 500      (D) 300      (E) 10
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9. A teacher organises her learners into groups. She gives each learner a number from 1, 2 or 3 in cyclic order, starting with 1. If the last learner has a 2, which of the following can be the number of learners in the teacher's class?
- (A) 24      (B) 25      (C) 26      (D) 27      (E) 28
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10. Dineo is driving from her home to Grahamstown. After driving for two hours at an average speed of 120 kilometres per hour, she still has 80 kilometres left to travel. What is the distance between the two places?
- (A) 120 km      (B) 320 km      (C) 240 km      (D) 80 km      (E) 200 km
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11. Every digit of a seven-digit multiple of 3 is 0, 2 or 3. There are more 3s than 0s. If each of 0, 2 and 3 appear at least once, what is the sum of all seven digits?

- (A) 6                      (B) 9                      (C) 12                      (D) 15                      (E) 18

12. The two stars in the diagram represent the same number. The sum of the three numbers in the second row is equal to twice the sum of the three numbers in the first row. What number does each star represent?

★	6	7
★	17	22

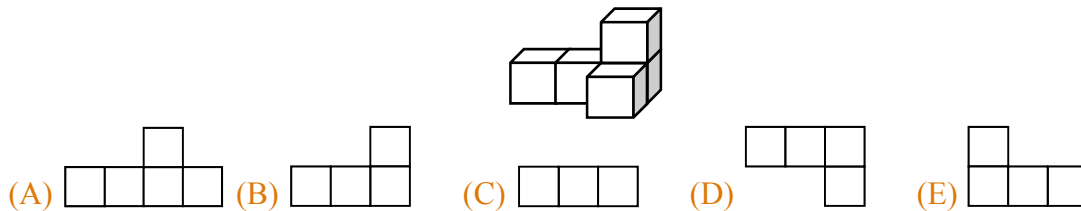
- (A) 7                      (B) 8                      (C) 13                      (D) 17                      (E) 18

13. A rope was cut in half and half was thrown away. The other half was cut again one third along the way. The longer part is 10 m long. How long was the original rope?

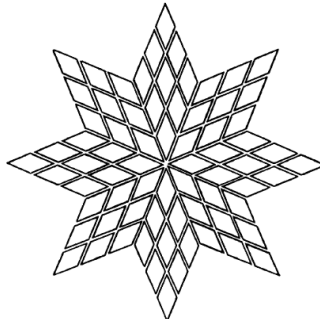


- (A) 10 m                      (B) 20 m                      (C) 30 m                      (D) 40 m                      (E) 60 m

14. What will you see if you look at this block building directly from behind?



15. How many small squares are there in this three-dimensional figure?



- (A) 63                      (B) 72                      (C) 80                      (D) 81                      (E) 90

16. Meriam counts like this: 6, 11, 16, 21, 26, ... What is the 100<sup>th</sup> number she will count?



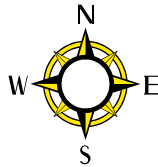
6, 11, 16, 21, 26, ....

- (A) 600      (B) 506      (C) 602      (D) 501      (E) 601

17. Refer to the previous question: If Meriam counts on and on, which of these numbers will she count?

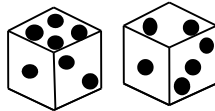
- (A) 3730      (B) 4526      (C) 5185      (D) 6524      (E) 7353

18. In Townville the park is 3 km west of the school. The library is 1 km west of the church. The church is 4 km east of the school. How far is the library from the park?



- (A) 6 km      (B) 4 km      (C) 5 km      (D) 7 km      (E) 8 km

19. If you roll two dice and multiply the two top numbers, how many different answers are possible?



- (A) 18      (B) 22      (C) 15      (D) 21      (E) 16

20. Study the following pattern. What is  $U_{20}$ ?



$$U_1 = 5$$



$$U_2 = 7$$



$$U_3 = 9$$

- (A) 43      (B) 44      (C) 45      (D) 46      (E) 47