

SA Mathematics Challenge 2014
GRADE 5 FINAL ROUND
30 JULY 2014

SA Wiskunde-uitdaging 2014
GRAAD 5 FINALE RONDE
30 JULIE 2014

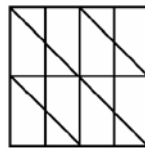
NOTE:

- 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!

LET OP:

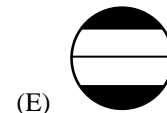
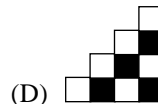
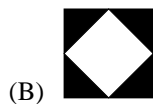
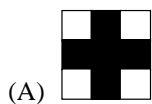
- Beantwoord die vrae volgens die instruksies op die antwoordblad.
- Jy mag 'n sakrekenaar gebruik.
- Die vrae toets insig. Omslagtige berekeninge is dus onnodig en tydrowend.
- Ons hoop jy geniet dit!

1. How many triangles are there in this figure?



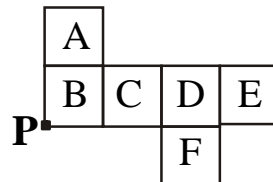
- (A) 12 (B) 14 (C) 16 (D) 18 (E) 20

2. In which one of the following is half of the figure shaded?



2. In watter een van die volgende is die helfte van die figuur verdonker?

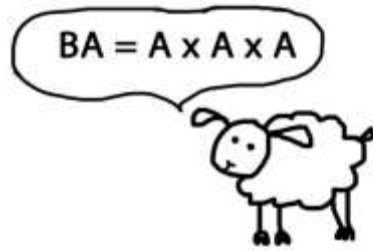
3. The net below must be folded to form a cube. Which three faces will meet at P?



- (A) B E F (B) A B C (C) B D F (D) A B E (E) A B F



4. In this alpha puzzle, each letter stands for a unique digit so that the number sentence is true. What is the value of B?



4. In hierdie alfa-raaisel staan elke letter vir 'n unieke syfer sodat die getalsin waar is. Wat is die waarde van B?

- (A) 9 (B) 8 (C) 7 (D) 6 (E) 5

5. Mr Greengrocer piles grapefruit in a square pyramid with 1 grapefruit in the first layer, 4 in the second layer from the top, 9 in the third layer, 16 in the fourth layer, etc. How many grapefruit will there be in the 10th layer?



5. 'n Groentehandelaar pak lemoene in 'n vierkantige piramide met 1 lemoen in die eerste laag, 4 in die tweede laag van bo, 9 in die derde laag, 16 in die vierde laag, ens. Hoeveel lemoene sal daar in die 10^{de} laag wees?

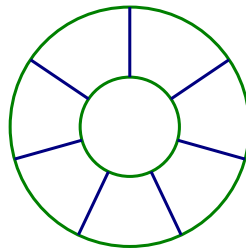
- (A) 100 (B) 81 (C) 20 (D) 144 (E) 121

6. A boxing match has twelve rounds of 3 minutes each and there is a minute break between each round. How long does the match last if it lasts the full 12 rounds?

6. 'n Boksgeveg het twaalf rondes van 3 minute elk en daar is 'n minuut ruskans tussen elke ronde. Hoe lank hou die geveg aan as dit die volle twaalf rondes duur?

- (A) 48 min (B) 47 min (C) 37 min (D) 36 min (E) 46 min

7. What is the least number of colours needed to paint this figure so that no two regions with a common border have the same colour?

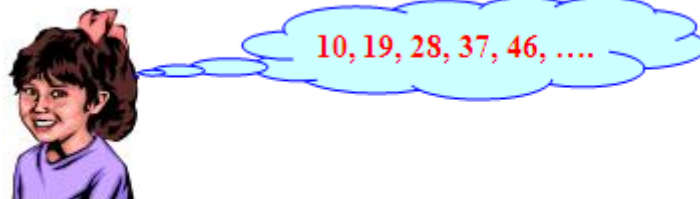


7. Wat is die minste aantal kleure wat benodig word om die figuur hieronder in te kleur sodat geen twee gebiede met 'n gemeenskaplike grens dieselfde kleur is nie?

- (A) 2 (B) 3 (C) 4 (D) 5 (E) 6

8. Sally counts like this: 10, 19, 28, 37, 46, 55, ... What is the 100th number she will count?

8. Sally tel so: 10, 19, 28, 37, 46, 55, ... Wat is die 100^{ste} getal wat sy sal tel?



- (A) 1000 (B) 990 (C) 909 (D) 901 (E) 910

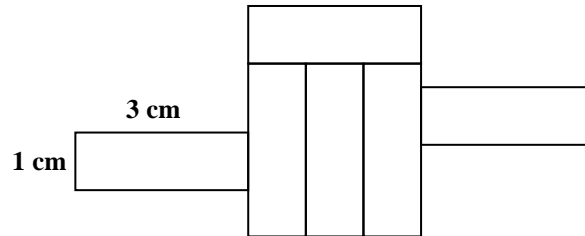
9. If Sally continues to count like this, which of these numbers will she count?

- (A) 1386 (B) 1424 (C) 1693

9. As Sally voortgaan om so te tel, watter van hierdie getalle sal sy tel?

- (D) 1737 (E) 1982

10. Rectangles with sides 3 cm and 1 cm are used to make the figure below. How far is it once around the figure?



- (A) 24 cm (B) 48 cm (C) 26 cm (D) 14 cm (E) 32 cm

11. Thomas forgot to take off his shoes when he got onto the scale to weigh himself. The scale showed 41 kg. He then weighed his two shoes and found that they had a mass of 725 g. What was his mass without his shoes?

- (A) 40,175 g (B) 40,725 kg (C) 39,275 kg

11. Thomas het vergeet om sy skoene uit te trek voor hy op die skaal geklim het om homself te weeg. Die skaal het 41 kg gewys. Toe weeg hy sy twee skoene en vind dat hulle 'n massa van 725 g het. Wat was sy massa sonder sy skoene?

- (D) 41,725 kg (E) 40,275 kg

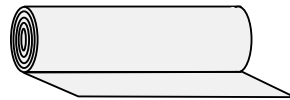
12. A factory manufactures dresses and shirts: 3 dresses are manufactured for every 4 shirts. In a week the factory produced a total of 420 dresses and shirts. How many of these were dresses?

- (A) 180 (B) 240 (C) 140

12. 'n Fabriek vervaardig rokke en hemde: vir elke 3 rokke word 4 hemde vervaardig. Gedurende 'n week word altesaam 420 rokke en hemde vervaardig. Hoeveel hiervan is rokke?

- (D) 315 (E) 120

13. After one-tenth of a roll of material was cut off, 99 m of material remains on the roll. How long was the original roll of material?



- (A) 90 m (B) 100 m (C) 110 m (D) 108 m

13. Na een tiende van 'n rol materiaal afgesny is, bly daar 99 m materiaal oor. Hoe lank was die oorspronklike rol materiaal?

- (E) None of these
Nie een hiervan nie

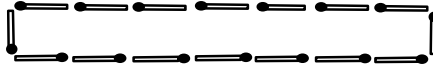
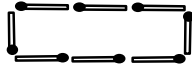
14. I choose three numbers from this number square – one number from each row and one number from each column. Then I multiply the three numbers. What is the largest possible product?

1	2	3
4	5	6
7	8	9

- (A) 72 (B) 96 (C) 105 (D) 162 (E) 504

14. Ek kies drie getalle uit hierdie getalvierkant – een getal uit elke ry en een getal uit elke kolom. Dan vermenigvuldig ek die drie getalle. Wat is die grootste moontlike produk?

15. John builds rectangles as shown. When the length of the rectangle is 3, there are 8 matches. When the length of the rectangle is 7, there are 16 matches. How many matches does he need to build a rectangle with length 20?



- (A) 48 (B) 42 (C) 80 (D) 46 (E) 44

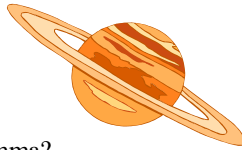
16. On the planet Gamma they have a different kind of arithmetic. Here are a few Gamma calculations:

$$4 \times 3 = 16$$

$$6 \times 3 = 24$$

$$7 \times 5 = 42$$

$$8 \times 7 = 64$$



What is the answer of 6×8 on Gamma?

- (A) 36 (B) 64 (C) 56

16. Op die planeet Gamma doen hulle 'n ander soort rekenkunde. Hier is 'n paar Gamma-berekeninge:

$$4 \times 3 = 16$$

$$6 \times 3 = 24$$

$$7 \times 5 = 42$$

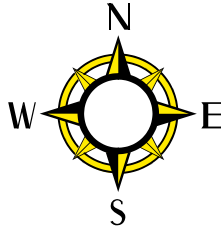
$$8 \times 7 = 64$$

Wat is die antwoord van 6×8 op Gamma?

- (D) 49 (E) 54

17. A, B, C, D, E and F are six towns situated as follows:

- D is 30 km East of F
- B is 20 km West of C
- A is 10 km West of E
- F is 10 km South of A
- D is 20 km North of C



How far is B from E?

- (A) 30 km (B) 20 km (C) 10 km

17. Ses dorpe A, B, C, D, E en F is soos volg geleë:

- D is 30 km Oos van F
- B is 20 km Wes van C
- A is 10 km Wes van E
- F is 10 km Suid van A
- D is 20 km Noord van C

Hoe ver is B van E?

- (D) 40 km (E) 50 km

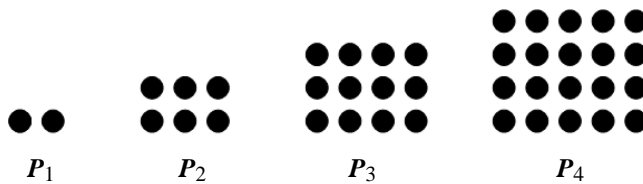
18. Jackie has four cards (see below). How many different four-digit numbers can she make with these cards?



- (A) 24 (B) 12 (C) 16 (D) 18 (E) 6

18. Jackie het vier kaarte (sien hieronder). Hoeveel verskillende viersyfer-getalle kan sy met hierdie kaarte maak?

19. Bruce uses dots to build patterns as shown below. How many dots will he use for P_{50} ?



- (A) 2601 (B) 1275 (C) 2550 (D) 2500 (E) 2600

19. Bruce bou patrone met kolletjies soos hieronder. Hoeveel kolletjies sal hy gebruik vir P_{50} ?

20. Calculate the value of this expression:

$$1 + 2 + 3 + 4 + \dots + 97 + 98 + 99 + 100 + 99 + 98 + 97 + \dots + 4 + 3 + 2 + 1$$

- (A) 500 (B) 688 (C) 10000 (D) 10100 (E) 10210