SA Mathematics Challenge 2014
GRADE 6 FIRST ROUND

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!

SA Wiskunde-uitdaging 2014
Graad 6 Eerste Ronde

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!

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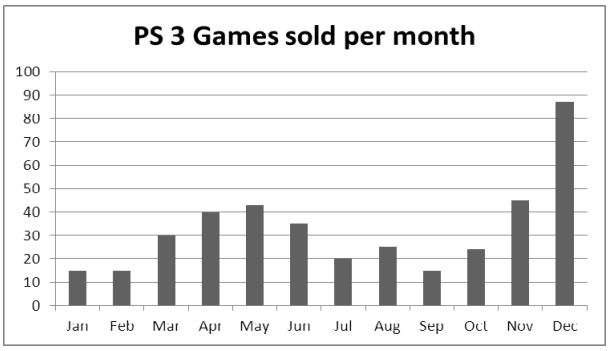
1. The graph shows the number of PS3 games sold per month for a period of one year. Which of the following is the best reading of the number of PS3 games sold in December?

1. Die grafiek toon die getal PS3 speletjies wat per maand verkoop is oor 'n tydperk van een jaar. Watter van die volgende is die beste lesing van die getal PS3 speletjies wat in Desember verkoop is?



(A) 81 (B) 83 (C) 84 (D) 87 (E) 90

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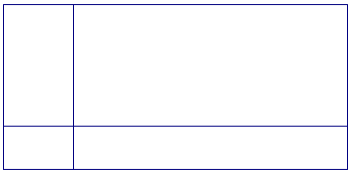
2. How many different rectangles (of all sizes) are in this figure?

2. Hoeveel verskillende reghoeke (van alle groottes) is daar in hierdie figuur?



(A) 4 (B) 9 (C) 5 (D) 18 (E) 7

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3. What is the first number in this pattern?

_____; 2100; 300; 60; 20

(A) 3900 (B) 18900 (C) 2900 (D) 14700 (E) 4580

3. Wat is die eerste getal in hierdie patroon?

_____; 2100; 300; 60; 20

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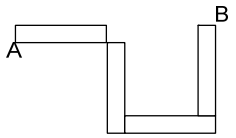
4. The figure below consists of five rectangles, each with side lengths 5 cm and 1 cm. What is the distance for an ant to walk from A to B along the figure?



(A) 28 cm (B) 22 cm (C) 17 cm (D) 27 cm (E) 20 cm

4. Die figuur hieronder bestaan uit vyf reghoeke, elk met sylengtes van 5 cm en 1 cm. Wat is die afstand vir 'n mier om van A na B om die figuur te loop?

5. $2\times(6+8) + 8\times(6+8) = ?$

(A) 140 (B) 76 (C) 148 (D) 96 (E) 38

5. $2\times(6+8) + 8\times(6+8) = ?$

6. The sum of three consecutive numbers (e.g. 4, 5, 6) is 138. What is the biggest of these numbers?

(A) 51 (B) 40 (C) 53 (D) 43 (E) 47

6. Die som van drie opeenvolgende getalle (bv. 4, 5, 6) is 138. Wat is die grootste van hierdie getalle?

7. What fraction is exactly halfway between $\frac{1}{4}$ and $\frac{1}{12}$

(A) $\frac{1}{8}$ (B) $\frac{3}{12}$ (C) $\frac{1}{6}$ (D) 0,6 (E) $\frac{1}{2}$

7. Watter breuk is presies halfpad tussen $\frac{1}{4}$ en $\frac{1}{12}$?

8. Which fraction is closest to $\frac{1}{3}$?

(A) $\frac{1}{6}$ (B) $\frac{39}{120}$ (C) $\frac{19}{60}$ (D) $\frac{89}{270}$ (E) $\frac{12}{39}$

8. Watter breuk is die naaste aan $\frac{1}{3}$?

9. Calculate the value of C if

$A \times B = 30$
$A + B = 17$
$B + C = 13$

(A) 18 (B) 2 (C) 8 (D) 15 (E) 11

9. Bereken die waarde van C as

$A \times B = 30$
$A + B = 17$
$B + C = 13$

10. You have ten blue socks, ten red socks and ten brown socks all mixed up in a drawer in a dark room. How many socks must you take from the drawer to be *sure* that you have a pair of the same colour?

(A) 11 (B) 20 (C) 21 (D) 4 (E) 22

10. Jy het tien blou sokkies, tien rooi sokkies en tien bruin sokkies wat deurmekaar in 'n laai in 'n donker kamer lê. Hoeveel sokkies moet jy uit die laai uithaal om *seker* te wees dat jy 'n paar van dieselfde kleur sal hê?

11. Refer to the previous question. How many socks must you take from the drawer to be *sure* that you have a pair of blue socks?

(A) 11 (B) 20 (C) 21 (D) 4 (E) 22

11. Verwys na die vorige vraag. Hoeveel sokkies moet jy uit die laai haal om *seker* te wees dat jy 'n paar blou sokkies het?

12. Which three of the five numbers below, rounded off to the nearest 10, has a sum of 70?

16; 19; 14; 8; 25

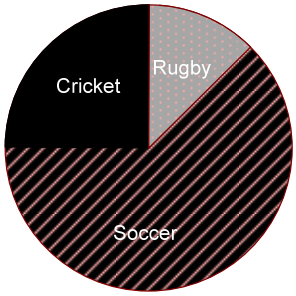
(A) 8;12; 25 (B) 14;19;25 (C) 8;16;19 (D) 8;19;25 (E) 16;19;25

12. Watter drie van die vyf getalle hieronder, afgerond tot die naaste 10, het 'n som van 70?

16; 19; 14; 8; 25

13. The pie-chart below shows the number of cricket balls, soccer balls and rugby balls sold by a sports shop in one year. The number of rugby balls sold is $\frac{1}{5}$ of the number of soccer balls sold. If 60 cricket balls were sold, how many soccer balls were sold?

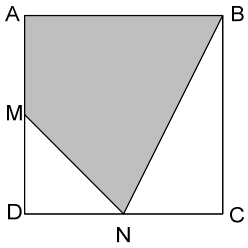
13. Die sirkeldiagram hieronder toon die getal krieketballe, sokkerballe en rugbyballe deur 'n sportwinkel verkoop in een jaar. Die getal rugbyballe wat verkoop is, is $\frac{1}{5}$ van die getal sokkerballe wat verkoop is. As 60 krieketballe verkoop is, hoeveel sokkerballe is verkoop?



(A) 30 (B) 60 (C) 150 (D) 180 (E) 270

14. ABCD is a square. M is halfway between A and D. N is halfway between C and D. What fraction is the shaded part of the square?

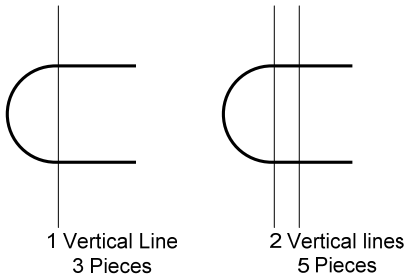
14. ABCD is 'n vierkant. M is halfpad tussen A en D. N is halfpad tussen C en D. Watter breuk is die verdonkerde deel van die vierkant?



(A) $\frac{3}{4}$ (B) $\frac{1}{2}$ (C) $\frac{3}{8}$ (D) $\frac{5}{8}$ (E) $\frac{5}{16}$

15. A piece of string forms a C-shape as shown below. When the string is cut along one vertical line, we get 3 pieces of string. When it is cut along two vertical lines, we get 5 pieces of string. If the string is cut like this along 9 vertical lines, how many pieces of string do we get?

15. 'n Stukkie tou lê in 'n C-vorm soos getoon. As die tou langs een vertikale lyn geknip word, het ons 3 stukkies tou. As die tou langs twee vertikale lyne geknip word, het ons 5 stukkies tou. As die tou so langs 9 vertikale lyn geknip word, hoeveel stukkies tou sal daar wees?



(A) 13 (B) 25 (C) 10 (D) 19 (E) 12

16. Small squares (1 cm by 1 cm) are arranged to form a larger square. Which number of small squares will have 3 small squares left after the larger square is formed?

16. Klein vierkantjies (1 cm by 1 cm) word gerangskik om 'n groter vierkant te vorm. Vir watter getal klein vierkantjies sal 3 klein vierkantjies oorbly nadat die groter vierkant gevorm is?

(A) 147 (B) 122 (C) 102 (D) 81 (E) 401

17. A traffic light flashes green, then amber, then red, then green again, and so on. In 100 consecutive flashes, starting with green, how many flashes are green?

(A) 34 (B) 45 (C) 33 (D) 25 (E) 19

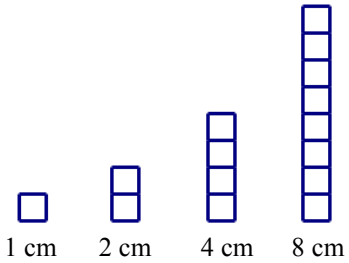
17. 'n Verkeerslig flits groen, dan oranje, dan rooi, dan weer groen, ensovoorts. Uit 100 agtereenvolgende flitse, beginnende met groen, hoeveel flitse is groen?

18. Robert, Ethan, Talissa and Nina want to play chess. Chess is played in pairs (2 players). How many different pairs of players are possible?

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

18. Robert, Ethan, Talissa en Nina wil skaak speel. Skaak word in pare gespeel (2 spelers). Hoeveel verskillende moontlike pare spelers is daar?

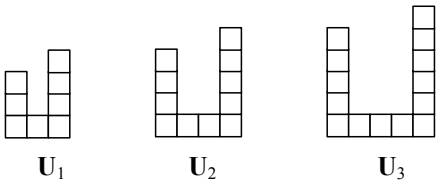
19. Four towers each of different heights (1 cm, 2 cm, 4 cm and 8 cm) are shown below. In addition to these towers other towers may be formed by combining any of these four towers. How many different towers can be formed?



(A) 15 (B) 14 (C) 8 (D) 12 (E) 4

19. Vier torings, elk van verskillende hoogte (1 cm, 2 cm, 4 cm en 8 cm) word hieronder getoon. Behalwe hierdie torings, kan ander ander torings ook gevorm word deur enige van hierdie vier torings te kombineer. Hoeveel verskillende torings kan altesaam gevorm word?

20. Sandra builds "U" shapes with blocks as shown in the sketch. How many blocks does she need to build $\mathbf{U}_{80}$?



(A) 203 (B) 54 (C) 300 (D) 161 (E) 245

20. Sandra bou "U" vorms met blokke soos in die skets getoon. Hoeveel blokke het sy nodig om $\mathbf{U}_{80}$ te bou?