

Jet SA Mathematics Challenge Jet SA Wiskunde-uitdaging

GRADE 6 FIRST ROUND GRAAD 6 EERSTE RONDE

AUGUST 2011 AUGUSTUS 2011

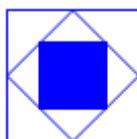
NOTE:

- 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. The figure is formed by successively joining the midpoints of the sides of a square. What fraction of the whole figure is shaded?



(A) $\frac{1}{3}$

(B) $\frac{1}{4}$

(C) $\frac{1}{2}$

(D) $\frac{2}{9}$

(E) $\frac{3}{8}$

2. The science class measured the growth of a plant over a two-week period, as shown in the table. What was the height of the plant after 11 days?

Days	0	2	4	6	8	10	12	14
Height (mm)	0	3	6	9	12	15	18	21

(A) 15 mm

(B) 18 mm

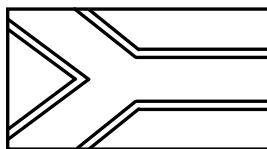
(C) 16 mm

(D) 17 mm

(E)

Not one of these
Nie een hiervan nie

3. This flag has 7 regions. You want to colour the flag so that no two touching regions are the same colour. What is the least number of colours you need?



(A) 2

(B) 3

(C) 4

(D) 5

(E) 6

4. Which fraction is exactly halfway between $\frac{1}{5}$ and $\frac{1}{7}$?

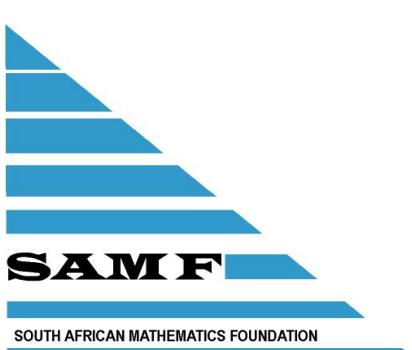
(A) $\frac{1}{6}$

(B) $\frac{1}{35}$

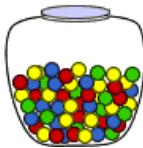
(C) $\frac{1}{12}$

4. Watter breuk is presies halfpad tussen $\frac{1}{5}$ en $\frac{1}{7}$?

(D) $\frac{6}{35}$
Not one of these
Nie een hiervan nie

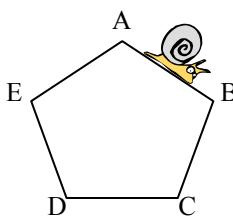


13. There are 4 green marbles, 6 red marbles, 6 yellow marbles and 8 blue marbles in a container. If Devan draws a marble at random, what is the probability that the marble will not be blue?



(A) $\frac{1}{8}$ (B) $\frac{2}{3}$ (C) $\frac{7}{8}$ (D) $\frac{1}{2}$ (E) $\frac{1}{3}$

14. Shane the snail starts at corner A and crawls clockwise once around the regular pentagon (a figure with 5 equally long sides). On what side will he be when he has crawled $\frac{13}{20}$ of the distance around the pentagon?



(A) AB (B) BC (C) CD (D) DE (E) EA

15. Refer to the previous question.
If each side of the pentagon is 5 cm long, how far has he still got to go?

(A) 16 cm (B) 16,25 cm (C) 9 cm (D) 8,75 cm (E) None of these
Nie een hiervan nie

16. Vusi multiplied two whole numbers and his answer is 64. Which of these cannot be the sum of the two numbers?

(A) 48 (B) 34 (C) 20 (D) 16 (E) 65

17. Cookie uses $\frac{2}{3}$ cups of milk in a recipe for 12 people. How many cups of milk should she use in the recipe for 18 people?

(A) $1\frac{1}{2}$ (B) $1\frac{1}{3}$ (C) $1\frac{2}{3}$ (D) $\frac{2}{3}$ (E) None of these
Nie een hiervan nie

18. Some boys and girls have R32 between them. Each boy has R4 and each girl R5. How many boys and girls are there all together?

(A) 9 (B) 7 (C) 6 (D) 5 (E) 4

19. For every 5 cars that General Motors sell, they sell 3 bakkies. During a specific week, General Motors sold a total of 96 vehicles (cars and bakkies). How many bakkies did General Motors sell during that week?

(A) 60 (B) 96 (C) 72 (D) 36 (E) 48

13. Daar is 4 groen albasters, 6 rooi albasters, 6 geel albasters en 8 blou albasters in 'n houer. As Devan willekeurig 'n albasters trek, wat is die waarskynlikheid dat die albastter nie blou sal wees nie?

14. Shane die slak begin by hoek A en seil klokgewys een keer rondom die gelyksydige vyfhoek ('n figuur met vyf ewe lang sye). Op watter sy sal hy wees wanneer hy $\frac{13}{20}$ van die afstand rondom die vyfhoek afgelê het?

15. Verwys na die vorige vraag.
As elke sy van die vyfhoek 5 cm lank is, hoe ver moet hy nog gaan?

16. Vusi het twee heelgetalle met mekaar vermenigvuldig en sy antwoord is 64. Watter hiervan kan nie die die som van die twee getalle wees nie?

(D) 16 (E) 65

17. Koekie gebruik $\frac{2}{3}$ koppies melk in 'n resep vir 12 mense. Hoeveel koppies melk moet sy in die resep gebruik vir 18 mense?

(D) $\frac{2}{3}$ (E) None of these
Nie een hiervan nie

18. 'n Aantal seuns en meisies het altesaam R32. Elke seun het R4 en elke meisie het R5. Hoeveel seuns en meisies is daar altesaam?

(D) 5 (E) 4

19. Vir elke 5 motors wat General Motors verkoop, verkoop hulle 3 bakkies. Gedurende 'n spesifieke week het General Motors 'n totaal van 96 voertuie (motors en bakkies) verkoop. Hoeveel bakkies het General Motors gedurende daardie week verkoop?

(D) 36 (E) 48

20. Numbers like 4, 5, 6 are called consecutive numbers. If the sum of 9 consecutive numbers is 135, what is the smallest of these numbers?

(A) 12 (B) 13 (C) 14

20. Getalle soos 4, 5, 6 word opeenvolgende getalle genoem. As die som van 9 opeenvolgende getalle 135 is, wat is die kleinste van hierdie getalle??

(D) 15 (E) Not one of these
Nie een hiervan nie

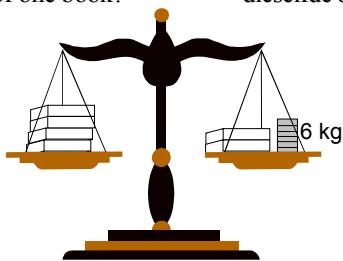
21. We know that exactly one of the five statements below is true. Which one is true?

(A) One of these statements is false
(B) Two of these statements are false
(C) Three of these statements are false
(D) Four of these statements are false
(E) Five of these statements are false

21. Ons weet dat presies een van die vyf bewerings hieronder waar is. Watter een is waar?

(A) Een van hierdie bewerings is onwaar
(B) Twee van hierdie bewerings is onwaar
(C) Drie van hierdie bewerings is onwaar
(D) Vier van hierdie bewerings is onwaar
(E) Vyf van hierdie bewerings is onwaar

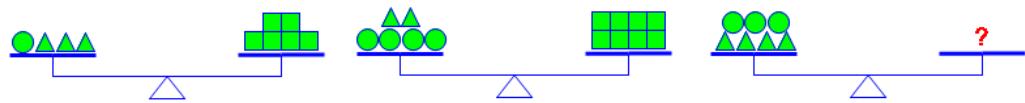
22. The scale shows that 4 books are balanced by 2 of the same books plus 6 kg. What is the mass of one book?



(A) 1½ kg (B) 6 kg (C) 3 kg (D) 2 kg (E) 2½ kg

22. Die skaal toon dat 4 boeke gebalanseer word deur 2 van dieselfde boeke plus 6 kg. Wat is die massa van een boek?

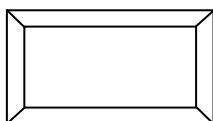
23. The first two scales below are perfectly balanced. How many squares are needed in place of ? so that the third scale will balance?



(A) 8 (B) 9 (C) 12 (D) 14 (E) 10

23. Die eerste twee skale hieronder is perfek gebalanseer. Hoeveel vierkante moet in die plek van die ? wees sodat die derde skaal balanseer?

24. You have a piece of wood 480 mm long from which you want to make a rectangular picture frame like in the sketch, with one side twice as long as the other. What length should you cut the longer side?

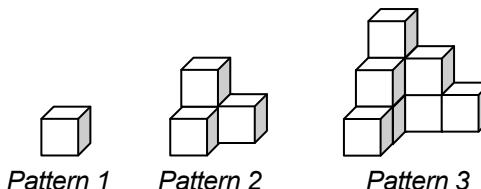


(A) 180 mm (B) 160 mm (C) 80 mm (D) 120 mm (E) 320 mm

24. Jy het 'n stuk hout wat 480 mm lank is, waaruit jy 'n reghoekige fotoraad soos in die skets maak, met een sy twee keer so lank as die ander. Hoe lank moet jy die langste sy maak?

25. Thandi builds a pattern of cubes as shown. How many cubes will there be in Pattern 20?

25. Thandi bou patronen met kubusse soos getoon. Hoeveel kubusse sal in Patroon 20 wees?



(A) 312 (B) 400 (C) 412 (D) 441 (E) 40