



Western Cape
Government
FOR YOU

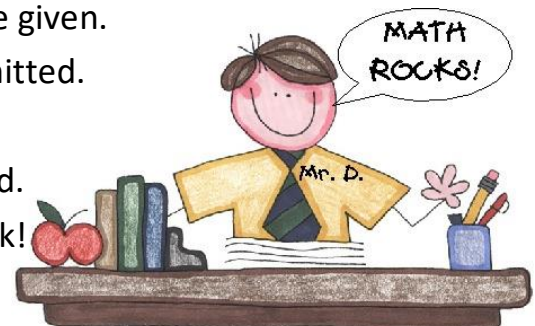


HMC 2022

SECOND ROUND

INSTRUCTIONS

- Before you start, make sure that your details are filled in accurately.
- Do not open this booklet until you are told to do so.
- This examination paper consists of 30 multiple choice questions. Each question is followed by answers marked A, B, C, D and E. Only one of them is correct.
- The final answers must be entered in the correct box on the ANSWER SHEET which is supplied separately.
- Each correct answer is worth:
 - 4 marks in Part 1 (Questions from 1 to 10)**
 - 5 marks in Part 2 (Questions from 11 to 20)**
 - 6 marks in Part 3 (Questions from 21 to 30)**
- There is a penalty, **-1 mark**, for every incorrect answer.
- Exam duration is 75 minutes and no extra time will be given.
- Calculators and geometric instruments are NOT permitted.
- Diagrams are NOT necessarily drawn to scale.
- Rough paper, pen, pencil, and an eraser are permitted.
- Start when the invigilator tells you to do so. Good luck!





1. What is the value of $(360 - 60 \div 2 + 7) \times 6$?
 A) 942 B) 1002 C) 1854 D) 1932 E) 2022

 2. Alex chose a whole number and multiplied it by 3. Which of the following numbers could not be his answer?
 A) 23 B) 27 C) 39 D) 51 E) 93
-
3. If $a - 2 = b + 1 = c - 4 = d + 3 = e - 5$, which of the numbers $a, b, c, d,$ and e is smallest?
 A) a B) b C) c D) d E) e

 4. Which one of the following fractions lies between $\frac{1}{2}$ and $\frac{2}{3}$?
 A) $\frac{17}{24}$ B) $\frac{1}{3}$ C) $\frac{1}{4}$ D) $\frac{7}{12}$ E) $\frac{13}{18}$

 5. Sheila has 38 matches. She builds a triangle and a square, using all the matches. Each side of the triangle consists of 6 matches. How many matches are in each side of the square?
 A) 4 B) 5 C) 6 D) 7 E) 8
-
6. Four friends were eating ice-cream:
 - Maria ate more than Faria,
 - Jaweria ate more than Veena,
 - Jaweria ate less than Faria.
 Which alternative lists the girls from the one who ate the most to the one who ate least?
 A) Maria, Jaweria, Veena, Faria
 B) Jaweria, Faria, Maria, Veena
 C) Maria, Faria, Jaweria, Veena
 D) Faria, Jaweria, Maria, Veena
 E) Faria, Jaweria, Veena, Maria
-
7. Rich and Nail are 25km apart from each other. They start to walk towards each other at the same time. If Rich walks at the speed of 2 km/hr and Nail walks at the speed of 3 km/hr, after how many hours will they meet each other?
 A) 4 hours B) 5 hours C) 10 hours D) 12 hours E) 13 hours

8. The number of hours left in a day is half the number of hours already passed. How many hours are left in the day?

A) 16

B) 12

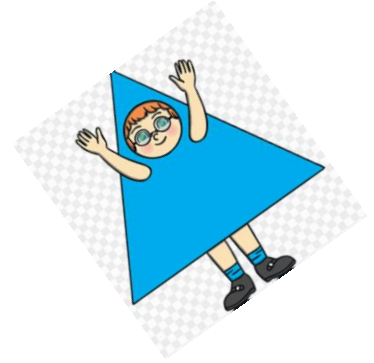
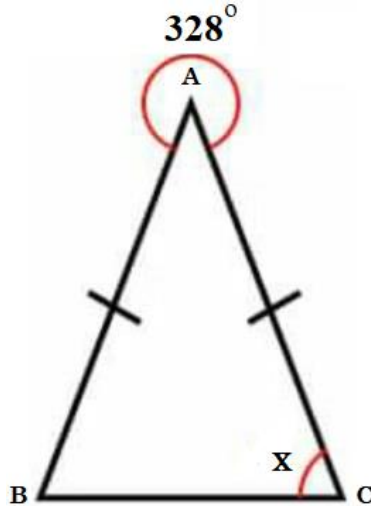
C) 8

D) 6

E) 4



9. $\triangle ABC$ is an isosceles triangle. Measurement of the reflex angle of \hat{A} is 328° . Determine the measurement of angle x .



A) 96

B) 92

C) 84

D) 80

E) 74

10. A cricket chirps 4 times in 8 seconds. At that rate, how many times does the cricket chirp in 2 minutes?

A) 48

B) 55

C) 60

D) 65

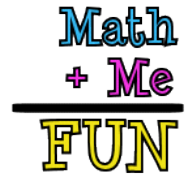
E) 72



PART – 2

5 marks each

11. Four identical small rectangles are put together to form a large rectangle as shown. The length of the shorter side of the large rectangle is 12 cm. What is the perimeter of the large rectangle?



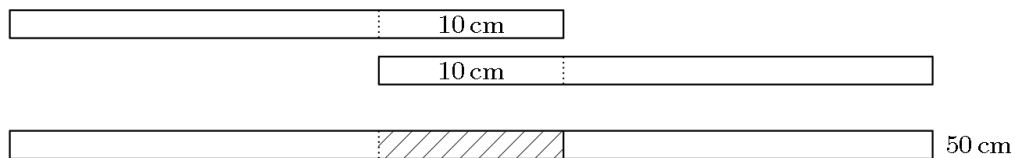
- A) 36cm B) 48cm C) 64cm D) 72cm E) 80cm

12. Find the value of $\frac{1}{2}$ of $\frac{1}{3}$ of $\frac{5}{6}$ of 360.

- A) 48 B) 50 C) 60 D) 72 E) 108



13. Jelly has 4 paper strips of the same length. She glues 2 of them together with a 10 cm overlap, and gets a strip 50 cm long.



With the other two paper strips, he wants to make a strip 56 cm long. How long should the overlap be?

- A) 4cm B) 6cm C) 10cm D) 12cm E) 24cm

14. A fly has 6 legs, while a spider has 8 legs. Together, 2 flies and 3 spiders have as many legs as 10 birds and

- A) 3 cats B) 4 cats C) 5 cats D) 6 cats E) 8 cats



15. Which one of the choices shows the longest duration of time?

- A) 900 minutes B) $\frac{1}{4}$ of a day C) 5 hours D) 900 seconds E) $\frac{1}{14}$ of a week

16. Shepherd Peter bought a certain number of bananas at Star Market. When he came the next day he found that the price of the bananas was reduced by 20%. He could now buy more bananas while spending the same amount as the previous day. How many percent more bananas could he buy?

- A) 30% B) 25% C) 24% D) 20% E) 16%



17. In the Musk's family, 5 people like to eat cherries. 4 people like to eat apples. 3 people like to eat both cherries and apples. How many people are there in the family?

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



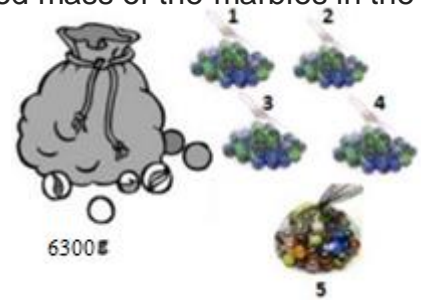
18. What is the smallest 4-digit number divisible by 3, 4 and 5?

- A) 1234 B) 1020 C) 1005 D) 1002 E) 1000

19. A bag of marbles weighing 6,300 g was repacked into 5 bags. The mass of the marbles in four of the bags was equal.

The mass of the marbles in the fifth bag is twice the combined mass of the marbles in the four bags.

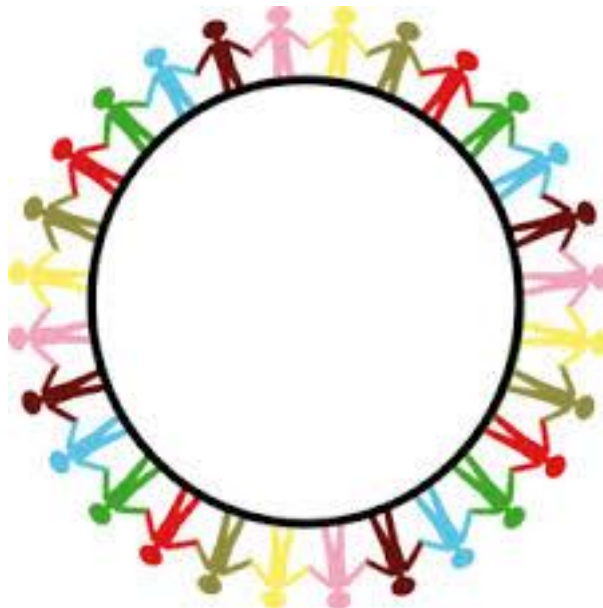
What is the mass of the marbles in the fifth bag?



- A) 1200 g B) 1600 g C) 3800 g D) 4200 g E) 4800 g

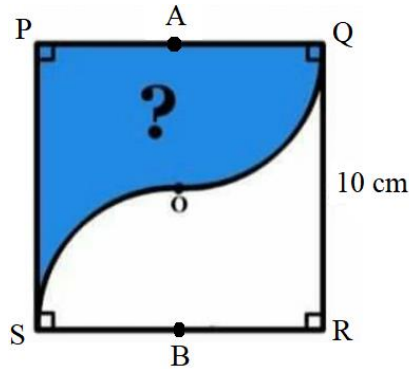
20. A rod of length 15 dm was divided into the greatest possible number of pieces of different integer lengths in decimeter. The number of cuts is:

- A) 3 B) 4 C) 5 D) 6 E) 7



- A) 1802 B) 1817 C) 1819 D) 1834 E) 1839

26. PQRS is a square with one side 10cm in length. Two quarter circles are drawn at central points A and B. Find the area of shaded region on the figure below.



- A) 10 cm² B) 25 cm² C) 50 cm² D) 90 cm² E) 100 cm²

27. A clock is 2 hours 20 minutes ahead of the correct time each week. The clock is set to the correct time at midnight Friday to Saturday. What time does this clock show at 6pm on Tuesday?

- A) 6:30pm B) 6:45pm C) 6:55pm D) 7:15pm E) 7:25pm



28. $\frac{1}{1 \times 4} + \frac{1}{4 \times 7} + \frac{1}{7 \times 10} + \frac{1}{10 \times 13}$ is equal to

- A) $\frac{2}{7}$ B) $\frac{3}{13}$ C) $\frac{3}{7}$ D) $\frac{7}{10}$ E) $\frac{4}{13}$

29. A box of chocolate has gone missing from the refrigerator. The suspects have been reduced to 5 children. Only one of them is telling the truth.

- A : 'I did not take the chocolate.'
- B : 'A is lying.'
- C : 'B is lying.'
- D : 'B took the chocolate.'
- E : 'C took the chocolate.'



Who took the chocolate?

- A) A B) B C) C D) D E) E

30. The ratio of the father's age to the son's age is 4: 1. The product of their ages is 196. What will be the ratio of their ages be after 5 years?

- A) 11: 4 B) 4: 11 C) 5: 12 D) 2: 3 E) 7: 3

THE END



NATIONAL HMC PARTICIPANTS

2004	800 Entrants	2013	23278 Entrants
2005	3000 Entrants	2014	23650 Entrants
2006	4500 Entrants	2015	33750 Entrants
2007	6000 Entrants	2016	36750 Entrants
2008	9500 Entrants	2017	50200 Entrants
2009	13250 Entrants	2018	51500 Entrants
2010	16800 Entrants	2019	82000 Entrants
2011	17300 Entrants	2020	27346 Entrants
2012	18500 Entrants	2021	60415 Entrants

27389 Participants from 205 schools entered
WCED & HMC 2021 in Western Cape

Organized by

WCED

ECED

Star College Johannesburg

(Horizon International High School)

Nizamiye Schools Johannesburg

Star College Cape Town

Star College Bridgetown

Star College Durban

Star College Pretoria

Star Academy Polokwane

Nizamiye Al-Azhar Port Elizabeth

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