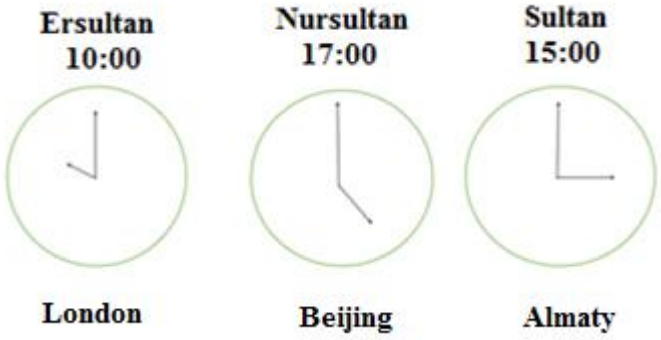
MATHEMATICAL LITERACY

Instruction: *You are offered the test tasks with one correct answer from five proposed. The selected answer should be marked on the answer sheet by painting the appropriate circle.*

1. Ersultan, Nursultan and Sultan are brothers. They live in three different cities around the world. Time zones of each cities are given below:



Sultan sent a message to his brothers at 20:20 by Almaty time. Nursultan read the message after 3 hours he had received it. At what time did Nursultan read the message?

A) 01:20
B) 15:20
C) 23:20
D) 13:20
E) 22:20

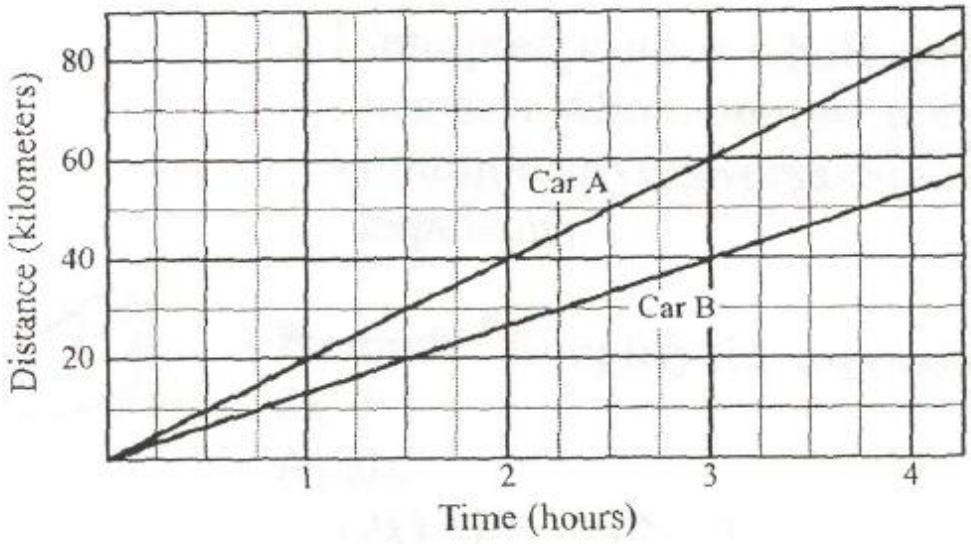
2. What is the last digit of expression 9^{99} ?

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

3. At the shop the price of good firstly increased by 15%, and then decreased by 10%. What was the initial price if now it costs 621 tenge?

A) 610 tg
B) 615 tg
C) 600 tg
D) 595 tg
E) 590 tg

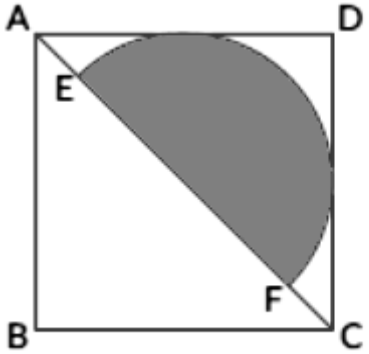
4. The graphs shows distance that cars A and B travel in given time. Accordingly, find the distance between cars A and B after they travel 3 hours.



A) 20 km
B) 10 km
C) 2 km
D) 40 km
E) 25 km

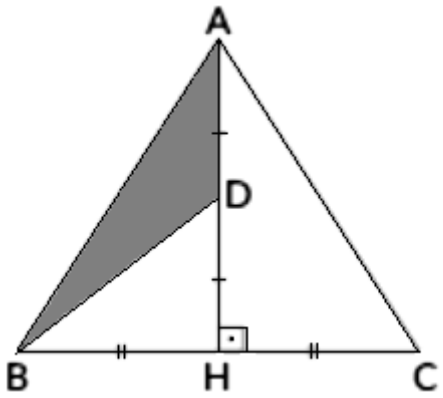
5. All wrestlers who participate on "Euraziya Barysy" wrestling competition have met with each other. How many wrestlers have arrived to competition, if the total number of fights is 45?
A) 9
B) 8
C) 19
D) 12
E) 10

6. The area of square ABCD is 64 cm^2. Find the shaded area. (π=3)



A) 26 cm^2
B) 28 cm^2
C) 25 cm^2
D) 20 cm^2
E) 24 cm^2

7. Given that AH = 14 cm and BC = 12 cm, then find the area of the shaded region.



A) 28 cm^2
B) 22 cm^2
C) 30 cm^2
D) 25 cm^2
E) 21 cm^2

8. Find the integers *a*,*b*, and c that satisfy the inequality:

$$\frac{1}{9} < \frac{a}{36} < \frac{b}{36} < \frac{c}{36} < \frac{2}{9}$$

A) 5, 4, 6
B) 5, 6, 7
C) 2, 3, 4
D) 3, 4, 5
E) 1, 2, 3

9. Given that:

$$a \supset b = 2a(a - b)$$

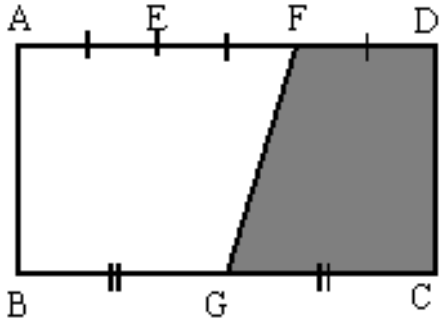
Find the value of the expression: $\frac{15 \supset 15}{15}$

A) –15
B) 0
C) 1
D) –1
E) 15

10. 855 digits where used to numerate pages of a book. How many pages has this book?

A) 321
B) 330
C) 335
D) 333
E) 325

11. 23 men and 15 women work at a fabric. 19 of them don't wear glasses. The amount of those who wear glasses and men are 34. How many men wear glasses?
    A) 4
    B) 19
    C) 11
    D) 8
    E) 15
12. ABCD is a rectangle with area 72 cm^2. Find the area of a shaded region.



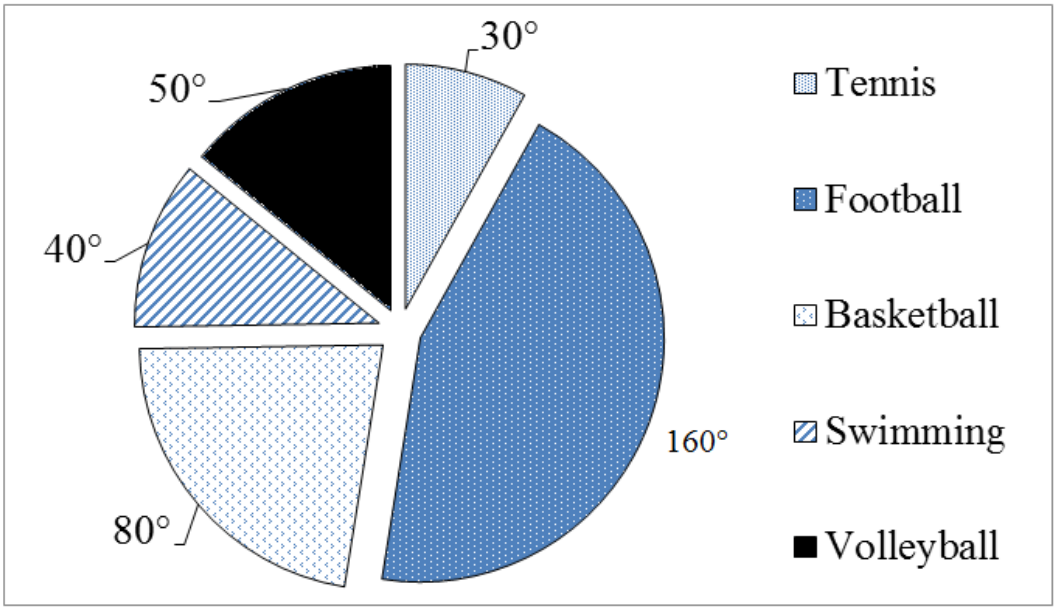
    A) 28 cm^2
    B) 30 cm^2
    C) 21 cm^2
    D) 22 cm^2
    E) 25 cm^2
13. Given that:

$$a \subset b = a(a - b)$$

    Find the value of the expression: $\frac{5 \subset 11}{6}$

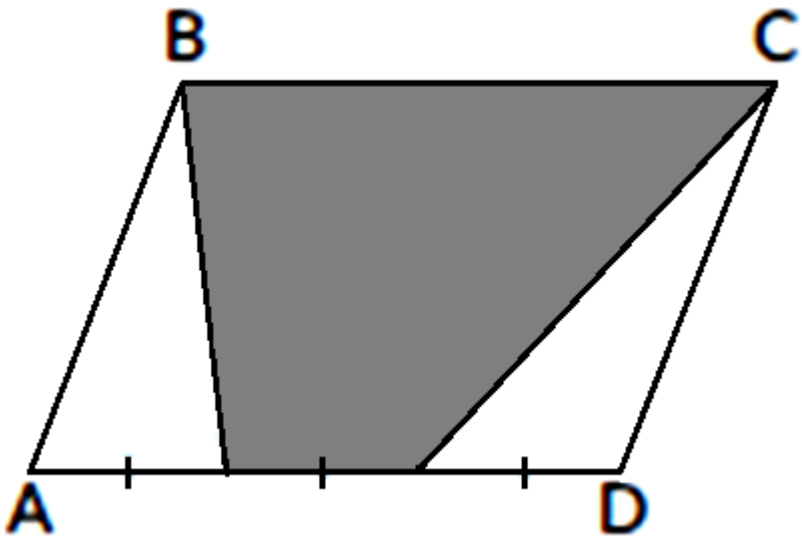
    A) 15
    B) 6
    C) –1
    D) 30
    E) –5

14. The result of a survey "**What is your favorite sport** " in a class are shown below. How many students like swimming, if there are 36 students in the class?



A) 3
B) 7
C) 12
D) 9
E) 4

15. ABCD parallelogram has area of 24 cm^2. What is the area of shaded region?



A) 16 cm^2
B) 20 cm^2
C) 12 cm^2
D) 8 cm^2
E) 18 cm^2

MATHEMATICAL LITERACY TEST IS COMPLETED