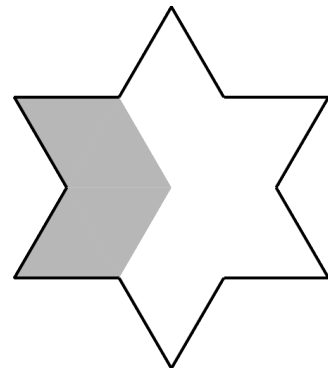
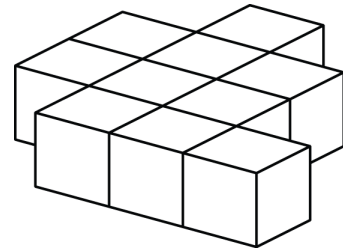


Mathematica Centrum

Together, let's shape the mathematicians of the future

BYRON-GERMAIN PREPARATORY TEST 2022

- $10 + 5 \times 2 = ?$
A) 20 B) 44 C) 32 D) 22 E) 30
- The number of faces of a cube plus the number of edges of a triangular pyramid is equal to
A) 12 B) 15 C) 16 D) 13 E) 14
- $2 \times 5 + 3 \times 5 = ?$
A) 65 B) 80 C) 18 D) 5×5 E) 22
- Which of the following is a multiple of 4 and 6?
A) 32 B) 16 C) 12 D) 15 E) 25
- Six times one third the value of 12 is equal to
A) 12 B) 15 C) 14
D) 10 E) 24
- Ten blocks have been glued together as shown in the diagram. How many faces of these blocks do not have glue on them?
A) 24 B) 36 C) 25
D) 23 E) 32
- The tens digit of the product of 4×15 is
A) 6 B) 5 C) 1
D) 0 E) 2
- Mathilda has 5 coins in her hand, none of which are pennies. If only one of these coins is a nickel, what is the least amount of money she can have in her hand?
A) 25¢ B) 30¢ C) 20¢
D) 45¢ E) 50¢
- What fraction of the polygon is shaded?A) $\frac{2}{3}$ B) $\frac{1}{3}$ C) $\frac{1}{2}$ D) $\frac{5}{6}$ E) $\frac{3}{7}$



10. When a number is tripled and 3 is subtracted, we get a result of 12. What is the number?

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

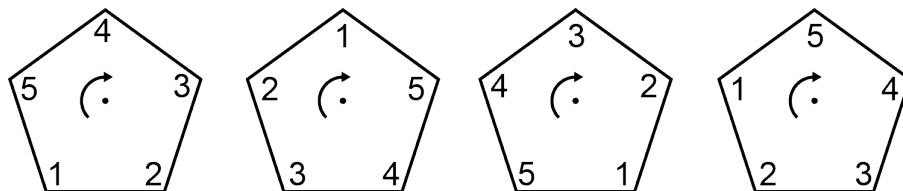
11. 4 hundreds = 10 tens + ? hundreds

- A) 1 B) 4 C) 2 D) 5 E) 3

12. What is the remainder of the division $30 \div 8$?

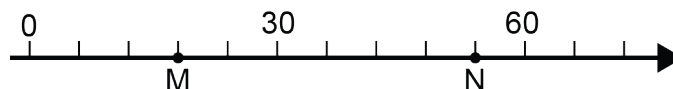
- A) 2 B) 4 C) 5 D) 3 E) 6

13. The pentagons in the diagram form a sequence. The rotation around the centre (in the direction shown by the arrow) that can generate this sequence is a rotation of



- A) 1/5 of a turn B) 4/5 of a turn C) 2/5 of a turn D) 5/5 of a turn E) 3/5 of a turn

14. What is the length of segment MN (distance between points M and N on the number line)?



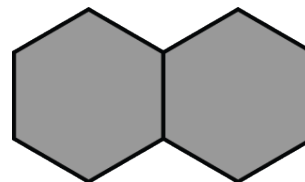
- A) 44 B) 36 C) 42 D) 34 E) 40

15. What is the smallest natural number that, when multiplied by 7, gives a result greater than 100?

- A) 17 B) 18 C) 14 D) 15 E) 16

16. How many hexagons must be drawn to completely surround the 2 shaded hexagons?

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



17. The missing number in the sequence: 64, 32, ?, 8, 4 is

- A) 0 B) 16 C) 18
D) 24 E) 20

18. Which of the following will yield a product that has the largest units digit?

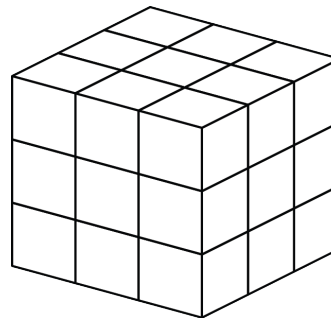
- A) $3 \times 3 \times 3$ B) $3 \times 5 \times 5 \times 6$ C) $11 \times 11 \times 11$ D) $2 \times 3 \times 5$ E) $1 \times 2 \times 3 \times 4$

19. The value of $(1 + 2 + 3 + \dots + 20)$ is 210. What is the value of $(3 + 6 + 9 + \dots + 60)$?

- A) 693
- B) 690
- C) 660
- D) 687
- E) 630

20. A large wooden cube is painted and then divided into 27 smaller cubes (see diagram). How many of these small cubes have 1 or 3 faces that are covered with paint?

- A) 12
- B) 18
- C) 14
- D) 20
- E) 22



21. Which spinner would you choose to increase your chances of getting a 1 or a 2?

