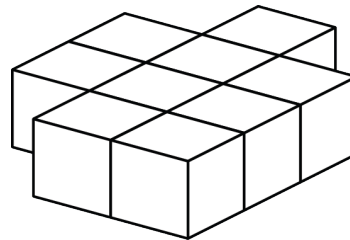


Mathematica Centrum

Together, let's shape the mathematicians of the future

THALES PREPARATORY TEST 2016

- The base of a pyramid has 6 sides. How many vertices does the pyramid have?
A) 5 B) 6 C) 7 D) 8 E) 9
- Which of the following is false?
A) $139 > 118$ B) $353 > 352$ C) $356 < 488$ D) $637 < 899$ E) $400 < 398$
- What is the difference between 7×12 and $72 \div 8$?
A) 77 B) 81 C) 74 D) 75 E) 76
- 8 weeks and 8 days is more than
A) 64 days B) 63 days C) 67 days D) 65 days E) 66 days
- The ten's digit of the result of $428 - 348$ is
A) 8 B) 9 C) 7 D) 5 E) 6
- You go to the gym 5 times each week. Which of the following is closest to the number of times you will go to the gym over a period of 6 months?
A) 200 times B) 80 times C) 130 times D) 150 times E) 110 times
- Nine blocks have been glued together, as shown in the diagram. How many blocks have exactly 3 faces that have glue on them?
A) 0 B) 1 C) 2
D) 3 E) 4
- Mathew is X years old and Mathilda Y years old. What was the sum of their ages 3 years ago?
A) $X + Y - 3$ B) $X + Y - 6$ C) $X + Y - 2$ D) $X + Y - 4$ E) $X + Y$
- How many 2-digit natural numbers are there?
A) 80 B) 100 C) 89 D) 90 E) 91



10. Which expression yields a sum that is even?

- A) $31 + 18 + 20$ B) $22 + 24 + 36 + 19$
 C) $12 + 14 + 17$ D) $12 + 14 + 55 + 33$
 E) $10 + 20 + 57$

11. Mathilda rolls a dice 30 times. About how many times should she expect to get a 5?

- A) 4 times B) 6 times C) 10 times
 D) 8 times E) 5 times

X	9	10	7
3	?	30	21
?	36	?	?

12. Which number, represented by a ?, has a value closest to 30?

- A) 36 B) 52 C) 28 D) 27 E) 39

13. 3 hundreds + 50 ones + 16 tens is equal to

- A) 610 B) 505 C) 520 D) 500 E) 510

14. 2 m + 1 dm + 5 cm is equal to

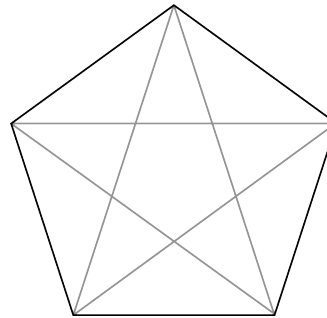
- A) 215 cm B) 225 cm C) 205 cm D) 200 cm E) 212 cm

15. If you were using \$5 bills and \$2 coins, how many ways could you make change for a \$20 bill?

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

16. Two diagonals can be drawn in a quadrilateral and 5 can be drawn in a pentagon (diagram). How many can be drawn in a hexagon (a polygon with 6 sides)?

- A) 10 B) 11
 C) 9 D) 12
 E) 8

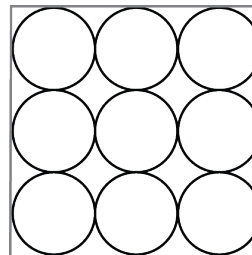


17. If $N \times N = 1 + 2 + 3 + 4 + 3 + 2 + 1$, then $10 \times N$ is equal to

- A) 50 B) 160
 C) 70 D) 40
 E) 80

18. Nine balls are inside a square box. Andrea wants to create something that looks like a pyramid. Using these balls as a base, how many more balls will she need to form a "pyramid"?

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



19. In the city of Neopolis, all streets are parallel or perpendicular. The distance between two consecutive parallel streets is 100 m. How many different 500 m routes are there to get from point A to point B?

- A) 10
- B) 11
- C) 12
- D) 13
- E) 14



20. Melissa has bought 5¢ and 10¢ stamps for a total of 55¢. If she were to buy the same number of 5¢ stamps, but twice the number of 10¢ stamps, it would cost her \$1.05. How many 5¢ stamps did she buy?

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