Mathematica Centrum

Together, let's shape the mathematicians of the future

FIBONACCI PREPARATORY TEST 2015

1. The number of vertices plus the number of edges of a pentagonal prism is equal to

A) 12 B) 25 C) 10 D) 14 E) 13

2. 2 + 7 + 3 + 8 = ?

A) 18 B) 20 C) 21 D) 10 E) 19

3. Which of the following is not even?

A) 2 x 3 B) 3 x 8 C) 3 x 5 D) 3 x 2 x 4 E) 2 x 3 x 5

4. (1 + 2 + 3 + 4 + 5) - (4 + 3 + 2 + 1) = ?

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

5. A number multiplied by 6 gives 48. When the same number is tripled, the result is

A) 15 B) 21 C) 27 D) 18 E) 24

6. The one's digit of the sum of 3 + 5 + 7 + 9 is

A) 4 B) 5 C) 24 D) 2 E) 3

7. The number of multiples of 5 between 10 and 30 is equal to

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

8. A quarter of an hour + half an hour + 1 hour is equal to

A) 108 minutes B) 105 minutes C) 115 minutes D) 110 minutes E) 100 minutes

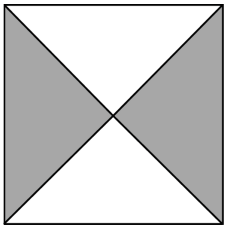
9. Twice a number minus the same number is equal to 10. What is the number?

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

10. The largest 3-digit even number that can be formed using the digits 7, 5, and 4 only once is

A) 754 B) 745 C) 457 D) 574 E) 475

11. What fraction of the square is shaded?



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

12. If April 3 is a Monday, which of the following shows the dates of all Saturdays in the month of April?

A) 1, 8, 15, 22, 29 B) 3, 10, 17, 24 C) 1, 8, 15, 23, 30
D) 8, 15, 22, 29 E) 1, 8, 14, 21, 28

13. If you add 1 hundred + 2 tens + 26 ones to the number 121, the result will be

A) 266 B) 270 C) 269 D) 268 E) 267

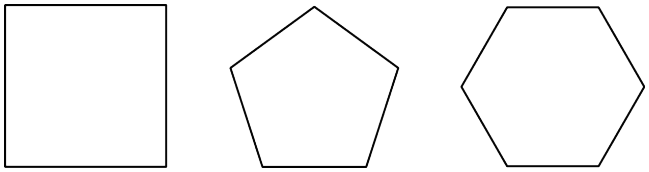
14. Which of the following equations is false?

A) 5¢ = \$0.50 B) 10¢ = \$0.10 C) \$1 = 100¢ D) 50¢ = \$0.50 E) 30¢ = \$0.30

15. A rope 50 cm long is cut into 5 equal pieces. The length of each piece is

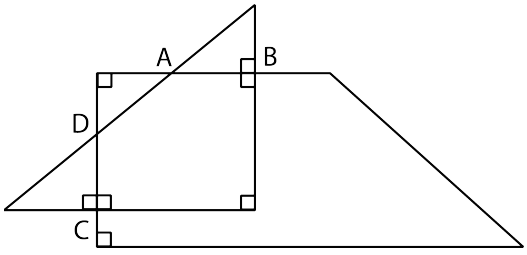
A) 20 dm B) 10 dm
C) 25 cm D) 2 dm
E) 10 cm

16. The number of lines of symmetry in a square plus the number of lines of symmetry in a regular pentagon plus the number of lines of symmetry in a regular hexagon is equal to



A) 14 B) 17 C) 16
D) 15 E) 13

17. A right-angled triangle and a right-angled trapezium intersect at points A, B, C, and D as shown in the diagram. The number of acute angles plus the right angles shown in this diagram is equal to

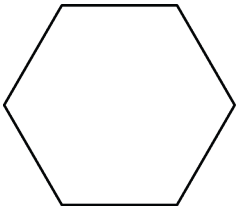


A) 12 B) 13 C) 14 D) 15 E) 16

18. The next number in the sequence: 30, 25, 21, 18, 16, … is

A) 12 B) 15 C) 14
D) 11 E) 13

19. The sum of 1 + 2 + 3 + 4 + 5 + 6 is divisible by



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

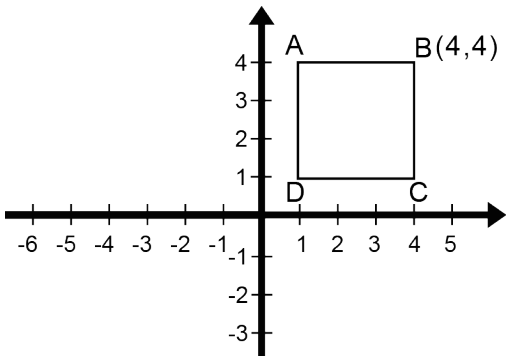
20. What is the minimum number of triangles needed to form the hexagon in the diagram?

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

21. The average of the two prime numbers in the following list: 5, 8, 9, 13, 18, 21 is equal to

A) 6 B) 7 C) 8 D) 9 E) 10

22. What are the coordinates of the image of vertex B, if square ABCD is moved (translation) 5 units down, 5 units to the left, 4 units up, and finally 4 units to the right?



A) (4 , 4) B) (5 , 4)
C) (3 , 3) D) (3 , 4)
E) (4 , 5)

23. Find the smallest natural number which is a multiple of 2, 3, and 5. When this number is multiplied by the fraction 2/3, the result is

A) 15 B) 30 C) 40 D) 25 E) 20

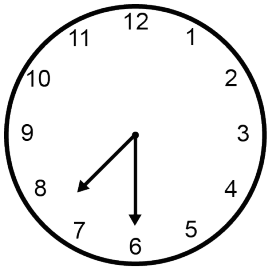
24. How many of the following polygons: triangle, rectangle, square, trapezium, and hexagon have less than three diagonals?

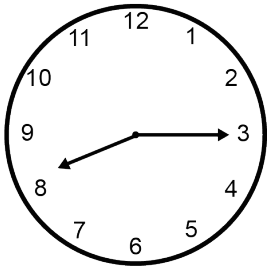
A) 4 B) 1 C) 5 D) 2 E) 3

25. The factors of 6 are {1, 2, 3, 6}. The factors of 20 are {1, 2, 4, 5, 10, 20}. How many factors does 36 have?

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

26. The first clock in the diagram shows the time at which Mathusalem started his breakfast. The second one shows the time when Mathusalem finished his breakfast. How many degrees did the minute hand turn from the time he started his breakfast and the time he finished?





A) 270º B) 150º C) 300º
D) 360º E) 240º

27. Which of the following is closest to the result of the sum of **3** 1/2 + 11/12 + **2** 1/3?

A) 6 B) 7 C) 9
D) 10 E) 8

28. The maximum number of points at which a circle and a square intersect is

A) 2 B) 3 C) 4 D) 6 E) 8

29. Mathew has worked 3/4 of an hour and Mathilda 2/3 of an hour. The number of minutes that one has worked more than the other is equal to

A) 6 minutes B) 10 minutes C) 4 minutes D) 5 minutes E) 8 minutes