Part A

1. What is the next number in the sequence 2, 5, 8, 11, 14, 17, …?

   (A) 19 (B) 20 (C) 21 (D) 25 (E) 31

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2. Julien tells his friends : " If I had taken twice as many apples, I would have 24 more than I have now". How many apples did Julien take?

   (A) 12 (B) 24 (C) 48 (D) 72 (E) None of these

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3. How many cubic millimetres are in a cubic kilometre?

   (A) 10^9 (B) 10^{12} (C) 10^{15} (D) 10^{18} (E) 10^{21}

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4. The average of the marks on an exam in a class of 30 students was 80%. If 15 of the students had each gotten a mark which was 10 points higher, what would the average have been for the class on this exam?

   (A) 75% (B) 80% (C) 85% (D) 90% (E) Not enough information

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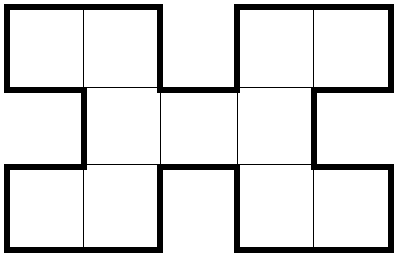
5. What is the perimeter length of the figure shown below? The figure consists of 1 X 1 blocks.



   (A) 20 (B) 21 (C) 22 (D) 23 (E) 24

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6. Starting at 5 and counting by 7's, Samuel counts 5, 12, 19, …. A number that will be counted is

   (A) 85 (B) 86 (C) 87 (D) 88 (E) 89

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7. If 3% of a number is 12, then the number is

   (A) .36 (B) 33.3 (C) 360 (D) 400 (E) None of these

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8. The value of $\frac{2}{3}+\frac{2}{9}\times\frac{3}{4}$ is?

(A) $\frac{5}{9}$ (B) $\frac{2}{3}$ (C) $\frac{5}{6}$ (D) 1 (E) $\frac{4}{3}$

9. A crate filled with empty bottles weighs 2 kg. The empty crate weighs 1.6 kg less than the bottles. How much does the empty crate weigh?

(A) 200 g (B) 300 g (C) 400 g (D) 1.6 kg (E) 1.8 kg

10. In a class of 25 students, 18 students enjoy mathematics and 22 students enjoy music. If every student in the class enjoys at least one of these, how many students in the class enjoy both?

(A) 3 (B) 7 (C) 15 (D) 20 (E) None of these

Part B

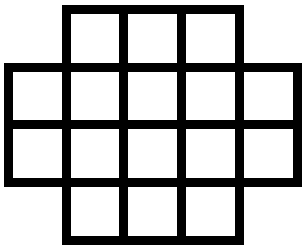
11. How many 4 letter "words" can be constructed from the letters ABCD if the letter A must always be next to the letter B? For example, two possible words are CABD and BADC.

(A) 6 (B) 8 (C) 10 (D) 12 (E) 14

12. Which of the following is the largest?

(A) $\frac{2}{1-\frac{1}{3}}$ (B) $\frac{2}{1+\frac{1}{3}}$ (C) $\frac{3}{1-\frac{1}{2}}$ (D) $\frac{3}{1+\frac{1}{2}}$ (E) $\frac{1}{\frac{1}{2}+\frac{1}{3}}$

13. How many squares can be found in the figure shown? The figure is constructed from 16 small squares each having lengths of 1.



(A) 20 (B) 24 (C) 25 (D) 26 (E) 27

14. Bernard has twice as many pennies as Anne. Charles has three times as many pennies as Bernard. The number of pennies they have together could be

(A) 44 (B) 45 (C) 46 (D) 47 (E) 48

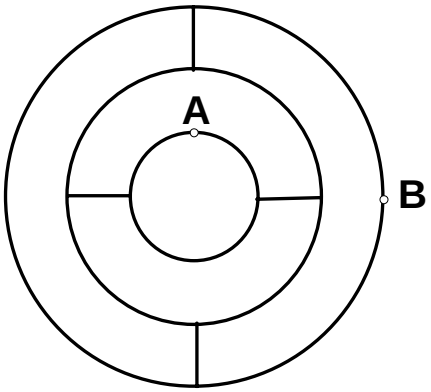
15. Half of the students in a class are girls. If the number of boys was twice as large and the number of girls half as large, what would the percentage of boys in the class become?

(A) 50% (B) 60% (C) 75% (D) 80% (E) Not enough information

16. An automobile travels at 30 km/h. The distance, in metres, it travels in 30 seconds is

(A) 25 m (B) 250 m (C) 324 m (D) 1500 m (E) 15000 m

17. How many different paths are there between A and B? Each path must travel along arcs of the circle only in a clockwise direction. On the straight line segments, the path can go only from a smaller circle to a larger circle. No arc or line segment can be travelled more than once in the same path.



(A) 4 (B) 5 (C) 6 (D) 7 (E) 10

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18. Four teams play a double knockout soccer tournament. In such a tournament, each team is eliminated after two losses. What is the minimum number of games needed to determine a winner?

(A) 3 (B) 6 (C) 9 (D) None of these (E) Not enough information

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19. The area of a rectangle whose sides have integer length is 24 m^2 and its perimeter is 22 m. What is the length of the small side of this rectangle?

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

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20. How many different numbers can be constructed using the digits 0, 1, 2, 2? All of the digits must be used each time and no number can begin with 0.

(A) 6 (B) 9 (C) 12 (D) 15 (E) 24

Part C

21. You are given a set of three numbers. If the numbers are added together two at a time, the sums are 23, 32 and 39. What is the sum of the three numbers?

(A) 44 (B) 47 (C) 50 (D) 94 (E) None of these

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22. The sum of all of the integers from 1 to 30 is 465. The sum of all of the integers from 1 to 30 that are divisible by 3 is

(A) 135 (B) 155 (C) 156 (D) 165 (E) None of these

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23. What is the value of the number in the box labelled A? Each of the empty spaces contains a number.

				Total
		A	**4**	**20**
		4	**9**	
	8			**13**
Total	**24**		**16**	**55**

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

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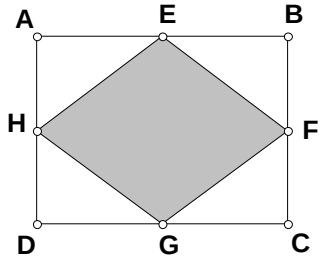
24. The area of rectangle ABCD is 12 m^2. E, F, G and H are the midpoints of the sides of rectangle ABCD. What is the area of the quadrilateral EFGH?



(A) $3m^2$ (B) $4m^2$ (C) $6m^2$ (D) $8m^2$ (E) None of these

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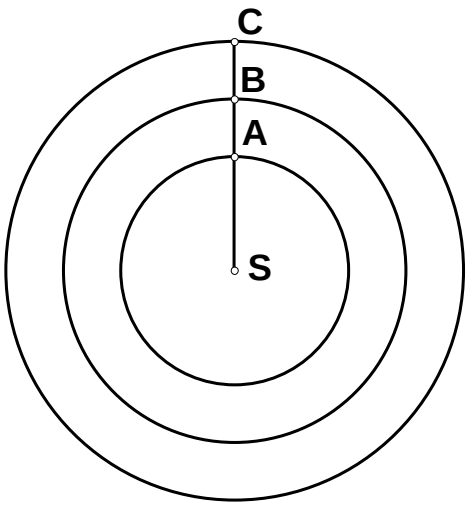
25. Find the value of $(1+\frac{1}{1})\times(1+\frac{1}{2})\times(1+\frac{1}{3})\times(1+\frac{1}{4})\times...\times(1+\frac{1}{2004})$

(A) 0 (B) 2004 (C) 2005 (D) 4008 (E) None of these

26. Three planets are in straight line as in the diagram below. Planet A makes a complete revolution around the Sun S in 2 years. Planet B makes its revolution in 4 years and Planet C in 6 years. What is the least number of years before all three planets will once again be on the same line?



(A) 6 years (B) 8 years (C) 9 years (D) 12 years (E) 24 years