

**Part A**

1. What is the value of  $\frac{1}{\frac{2}{3} - \frac{1}{2}}$ ?

- (A)  $\frac{1}{6}$       (B)  $\frac{1}{5}$       (C)  $\frac{3}{4}$       (D) 2      (E) 6
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2. Alain has eaten  $\frac{1}{5}$  of a pizza and Yacine has eaten  $\frac{3}{4}$  of the rest. What portion of the pizza is left for Paul?

- (A) 20%      (B) 25%      (C) 40%      (D) 60%      (E) None of these
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3. 45 divided by .03 is equal to

- (A) .15      (B) 1.5      (C) 15      (D) 150      (E) 1500
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4. Which of the following fractions is the largest?

- (A)  $\frac{(3-2)}{(8-2)}$       (B)  $\frac{3}{8}$       (C)  $\frac{(3+12)}{(8+12)}$       (D)  $\frac{(3+1)}{(8+1)}$       (E)  $\frac{(3+2)}{(8+2)}$
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5. What is the sum of all the integers which divide 18 evenly?

- (A) 21      (B) 31      (C) 37      (D) 38      (E) 39
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6. How many ways can the value 13 be expressed as the sum of exactly 3 different positive integers? For example,  $13 = 1 + 4 + 8$  is one such way. Note that  $13 = 4 + 8 + 1$  does not count as a “different” way since the same integers are involved in the sum.

- (A) 5      (B) 6      (C) 7      (D) 8      (E) 14
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7. Nine hens lay 12 eggs in 4 days. How many eggs will 4 hens lay in 9 days?

- (A) 11      (B) 12      (C) 13      (D) 14      (E) 15
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8. The average mark on the first 3 tests Jean took was 76. What average mark does Jean need on the next two tests to have an average of 80 for all of the tests?
- (A) 80                      (B) 84                      (C) 85                      (D) 86                      (E) None of these
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9. Three different integers each greater than one are multiplied together. The result cannot be equal to
- (A) 24                      (B) 30                      (C) 72                      (D) 90                      (E) It can be all of these
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10.  $(2x + y) - (3x - y) + (y - x)$  is equal to
- (A)  $3y - 2x$                       (B)  $y - x$                       (C)  $3y$                       (D)  $y - 2x$                       (E)  $x + y$
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**Part B**

11. Suppose that the operation  $*$  is defined by  $a*b = ab - b$  for every pair of integers  $a$  and  $b$ . What is the result of  $(4*1)*3$ ?

- (A) 0                      (B) 1                      (C) 6                      (D) 9                      (E) 12
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12. A number is composed of 4 digits. The last digit is equal to 4 times the first digit, the second digit is equal to 6 times the first digit and the third digit is equal to 3 plus the second digit. What is the sum of this number's digits?

- (A) 9                      (B) 10                      (C) 11                      (D) 20                      (E) 23
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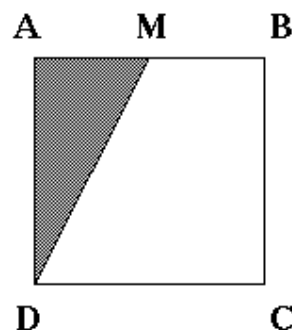
13. A basket contains some apples. Alice takes  $\frac{1}{2}$  of the apples and then places 15 of the apples back in the basket. Barry then takes  $\frac{1}{2}$  of the remaining apples and places 10 back in the basket. They find that each of them has the same number of apples. How many apples are left in the basket?

- (A) 10                      (B) 20                      (C) 30                      (D) 50                      (E) Not enough information
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14. A bus starts off with some passengers. At the first stop,  $\frac{1}{3}$  of the passengers get off and 8 people get on. At the second stop,  $\frac{1}{2}$  of the passengers remaining get off and 2 get on the bus. There are now half as many passengers as started the trip. How many persons started the trip?

- (A) 18                      (B) 24                      (C) 27                      (D) 30                      (E) 36
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15. Consider the square **ABCD**. **M** is in the middle of **AB**. If the area of triangle **AMD** is 4, find the area of the square **ABCD**.



- (A) 9                      (B) 11                      (C) 16                      (D) 20                      (E) None of these answers
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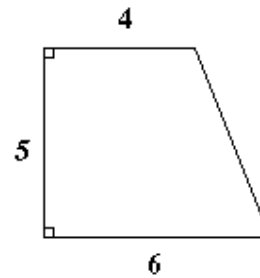
16. Which of the following is the largest?

- (A)  $2^{10}3^5$       (B)  $2^{17}$       (C)  $4^8$       (D)  $6^7$       (E)  $3^9$
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17. Find a number such that, when we multiply it by 2, and 4 is subtracted from the result, and, this new result is divided by 4 and 5 is added to the final result, we obtain the same number as we started with.

- (A) 3      (B) 8      (C) 9      (D) 10      (E) 18
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18. The area of the figure, in square centimetres, is



- (A) 20      (B) 22      (C) 25      (D) 30      (E) 40
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19. In a class of 30 students 23 students went swimming, 19 students went skating and 14 students did both. How many students did not do either of these activities?

- (A) 2      (B) 3      (C) 7      (D) 11      (E) 16
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20. For a visit to the municipal library, a teacher asks her students to form rows of 3 students per row. Solène, Nadine and Yasmine are in the 5<sup>th</sup> row starting from the front and the 6<sup>th</sup> row starting from the back. How many students will visit the library?

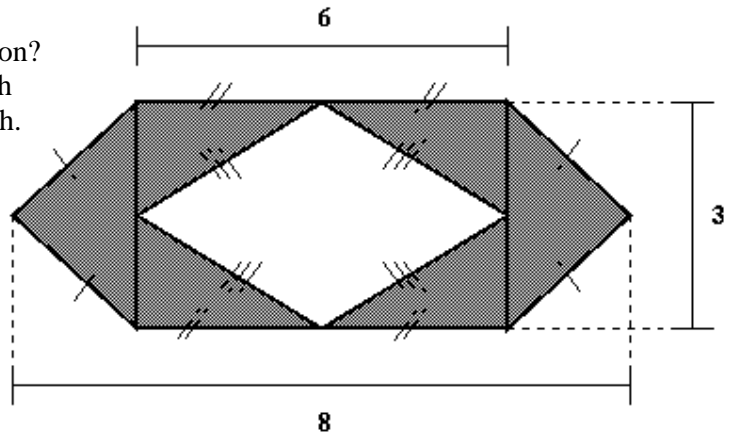
- (A) 24      (B) 27      (C) 30      (D) 33      (E) 36
-



25. The integers from 1 to 25 are multiplied together. How many zeros does the result end in?

- (A) 2                      (B) 3                      (C) 4                      (D) 5                      (E) 6
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26. What is the area of the shaded region?  
Line segments that are marked with the same symbol are equal in length.



- (A) 8                      (B) 10                      (C) 12                      (D) 15                      (E) None of these answers
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