



Candidate's name: \_\_\_\_\_

Date: \_\_\_\_\_

## TEST 1

15 questions – 60 minutes

- You may use a calculator
- All numbers are real numbers

1. A dress on sale in a shop is marked at \$D. During the discount sale its price is reduced by 15%. Staff are allowed a further 10% reduction on the discounted price. If a staff member buys the dress what will she have to pay in terms of D?

A. 0.75D  
B. 0.76D  
C. 0.765D  
D. 0.775D  
E. 0.805D

2. In a class of 78 students 41 are taking French, 22 are taking German. Of the students taking French or German, 9 are taking both courses. How many students are not enrolled in either course?

A. 6  
B. 15  
C. 24  
D. 33  
E. 54

3. If  $f(x) = |x^2 - 50|$ , what is the value of  $f(-5)$ ?

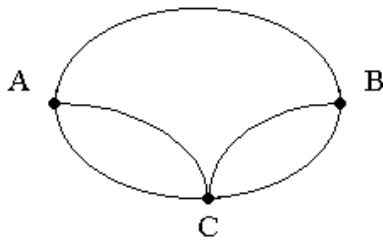
A. 75  
B. 25  
C. 0  
D. -25  
E. -75

4.  $(\sqrt{2} - \sqrt{3})^2 =$

A.  $5 - 2\sqrt{6}$   
B.  $5 - \sqrt{6}$   
C.  $1 - 2\sqrt{6}$   
D.  $1 - \sqrt{2}$   
E. 1



5. Amy has to visit towns B and C in any order. The roads connecting these towns with her home are shown on the diagram. How many different routes can she take starting from A and returning to A, going through both B and C (but not more than once through each) and not travelling any road twice on the same trip?



- A. 10  
B. 8  
C. 6  
D. 4  
E. 2
6. Helpers are needed to prepare for the fete. Each helper can make either 2 large cakes per hour, or 35 small cakes per hour. The kitchen is available for 3 hours and 20 large cakes and 700 small cakes are needed. How many helpers are required?
- A. 10  
B. 15  
C. 20  
D. 25  
E. 30
7. Jo's collection contains US, Indian and British stamps. If the ratio of US to Indian stamps is 5 to 2 and the ratio of Indian to British stamps is 5 to 1, what is the ratio of US to British stamps?
- A. 5 : 1  
B. 10 : 5  
C. 15 : 2  
D. 20 : 2  
E. 25 : 2
8. Half the people on a bus get off at each stop after the first, and no one gets on after the first stop. If only one person gets off at stop number 7, how many people got on at the first stop?
- A. 128  
B. 64  
C. 32  
D. 16  
E. 8

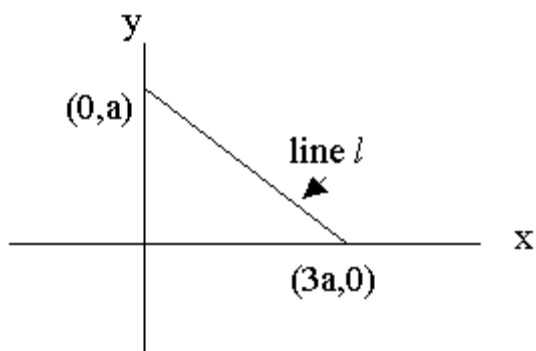


9. If  $f(x) = (x + 2) / (x - 2)$  for all integers except  $x=2$ , which of the following has the greatest value?

- A.  $f(-1)$
- B.  $f(0)$
- C.  $f(1)$
- D.  $f(3)$
- E.  $f(4)$

10. In the figure below, what is the slope of line  $l$  ?

- A. - 3
- B. -  $1/3$
- C. 0
- D.  $1/3$
- E. 3



11. How many solutions does this equation have?  $(x-1)(2x^2+1)=0$

- A. 0
- B. 1
- C. 2
- D. 3
- E. 4

12. If  $a^2 = 12$ , then  $a^4 =$

- A. 144
- B. 72
- C. 36
- D. 24
- E. 16



13.  $3x + y = 19$ , and  $x + 3y = 1$ .  
Find the value of  $2x + 2y$

- A. 20
- B. 18
- C. 11
- D. 10
- E. 5

14.  $x$  and  $y$  are positive integers  
 $x + y < 11$ , and  $x > 6$   
What is the largest possible value of  $y$  if  $x$  has minimum value?

- A. 4
- B. 3
- C. 2
- D. 1
- E. 0

15. Sheila works 8 hours per day on Monday, Wednesday and Friday, and 6 hours per day on Tuesday and Thursday. She does not work on Saturday and Sunday. She earns \$324 per week. How much does she earn in dollars per hour?

- A. 11
- B. 10
- C. 9
- D. 8
- E. 7



## TEST 1

1	C
2	C
3	B
4	A
5	B
6	A
7	E
8	B
9	D
10	B
11	B
12	A
13	D
14	B
15	C