Choice E is NOTA which means "None of the Above".

1. If $a = 2, b = -3,$ and $c = 5,$ then $\frac{ab^2 - c}{4c - 3b} =$

a. $\frac{13}{29}$

b. $\frac{13}{11}$

c. $\frac{31}{29}$

d. $\frac{31}{11}$

e. NOTA

2. $6[x + (-y)] + (-3)(3x + y) =$

a. $-3(x - 3y)$
b. $-3(x + 3y)$
c. $-3(x + 5y)$
d. $-3(5x - 3y)$
e. NOTA

3. Square A has a perimeter of 14 cm. The sides of square B are 2 cm longer than those of square A. What is the area of square B in square cm?

a. 12.25
b. 22
c. 25.75
d. 30.25
e. NOTA

4. In an election 10% of the voters voted for Smith, 30% voted for Perez, 20% voted for Peterson and the remaining 120 voted for Pham. How many votes were cast for Perez?

a. 20
b. 48
c. 120
d. 400
e. NOTA

5. $(2, -3), (-1, 5)$ and $(5, k)$ are points on the same line. Find the value of k.

a. 1
b. −6
c. −11
d. −15
e. NOTA

6. Which of the following is an equation of the line passing through (−2, 5) and whose y-intercept is the same as $2x - 5y = 10$?

a. $7x + 2y = 4$
b. $3x + 2y = -4$
c. $3x + 2y = 4$
d. $7x + 2y = -4$
e. NOTA

7. A room contained 3600 mosquitoes when it was sprayed with an insect killer. At the end of one hour a certain fraction of the mosquitoes had died and at the end of the second hour the same fraction of the first hour's survivors had died leaving $\frac{1}{9}$ of the original number. What fraction died each hour?

a. $\frac{1}{3}$

b. $\frac{4}{9}$

c. $\frac{2}{3}$

d. $\frac{3}{4}$

e. NOTA

8. Which equation below has no solution?

a. $8x - 10 = \frac{2}{3}(15x + 3)$
b. $5(x + 3) + 4 = 9x + 19$
c. $6(x + 3) - 15 = 6x + 18$
d. $2(6x + 3) = 3(4x + 2)$
e. NOTA

9. What is the smallest positive number that you can multiply by to eliminate the fractions in the equation $\frac{4}{5}x+\frac{2}{9}=\frac{1}{6}-\frac{4}{15}x$?

a. 45
b. 120
c. 180
d. 270
e. NOTA

10. $(x+\sqrt{5})(x-2)(x+5)(x-\sqrt{5})=$

a. $x^4+3x^3-15x^2-15x+50$
b. $x^4+3x^3-5x^2-15x+50$
c. $x^4+3x^3-35x^2-75x+250$
c. $x^4+3\sqrt{5}x^3-15x^2+15\sqrt{5}x+50$
e. NOTA

11. A car goes $2m^3+15m^2+13m-63$ kilometers in $2m+9$ hours. Find its rate of speed in kilometers per hour.

a. m^2+3m+7
b. $m^2+12m+7$
c. m^2+3m-7
d. $m^2-3m+14$
e. NOTA

12. To make a portrait bust, Sara bought 2 kg of dark clay and 3 kg of light clay paying \$13 for the clay. She later needed one more kg of dark clay and 2 kgs more of light clay, costing \$7 altogether. What is the total amount she spent on <u>dark</u> clay?

a. \$1.00
b. \$5.00
c. \$12.00
d. \$15.00
e. NOTA

13. Solve for k if $p=\sqrt{\frac{kl}{g}}$.

a. $\frac{gp}{l^2}$

b. $\frac{gp^2}{l}$

c. $\frac{p^2q\sqrt{l}}{l}$

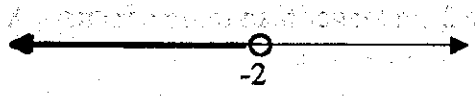
d. $\frac{g\sqrt{p}}{l}$

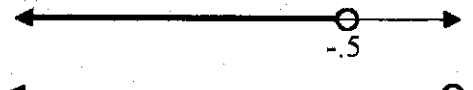
e. NOTA

14. Which of the following statements is false?

a. Every integer is a rational number.
b. Every natural number is a whole number.
c. Some real numbers are integers.
d. The absolute value of any number is positive.
e. NOTA

15. Which is the graph of k such that $\frac{2k-5}{-4}>1$

a.


b.


c.


d.

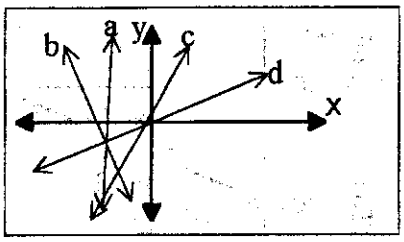

e. NOTA

16. The greater of two numbers is 6 more than the smaller. Three times the smaller plus 5 more than the larger is 95. Find the sum of the numbers.

a. 38
b. 42
c. 48
d. 54
e. NOTA

17. Which of the given lines has the greatest slope?

a. a
b. b
c. c
d. d
e. NOTA



18. If $\frac{a}{b}=\frac{4}{3}$ and $\frac{c}{d}=\frac{9}{14}$, find $\frac{3ac-bd}{4bd-7ac}$

a. $\frac{-7}{11}$

b. $\frac{-11}{14}$

c. $\frac{-77}{18}$

d. $\frac{-11}{7}$

e. NOTA

19. Solve for x: $9-(2x+1)\le 5x+6$

a. $x\ge\frac{2}{7}$

b. $x\le -2$

c. $x\ge\frac{14}{3}$

d. $x\ge\frac{4}{7}$

e. NOTA

20. Which of the following sets is closed under multiplication?

a. positive integers
b. irrational numbers
c. negative numbers
d. imaginary numbers
e. NOTA

21. Find $x+y$ if $ax+by=2ab$ and $bx+ay=a^2+b^2$.

a. $\frac{a^2b}{a-b}$

b. $a+b$

c. $\frac{a+b}{ab}$

d. $\frac{-(a-b)^2}{a+b}$

e. NOTA

22. $\frac{(a^2b^4c^3)^5(-2a^3b^2)^3}{(a^2b^3c^4)^7}=$

a. $\frac{-6a^5b^8}{c^{13}}$

b. $-8a^7b^4c^{19}$

c. $-8a^7b^4c^{-13}$

d. $-8a^5b^5c^{-13}$

e. NOTA

23. Which of the following expresses the function shown in the table?

a. $f(x)=x+5$
b. $f(x)=x^2+2x+1$
c. $f(x)=x+3$
d. $f(x)=x^2+3$
e. NOTA

x	-1	1	3	4
$f(x)$	4	4	12	19

24. A rectangle is painted in one corner of a 24 ft by 18 ft patio. The painter's instructions are to cover $\frac{1}{6}$ of the area of the patio. The unpainted area is to be the same width on both sides. What is the perimeter of the painted rectangle?

a. 28
b. 36
c. 48
d. 52
e. NOTA

25. Simplify:
$-[3z^2+5z-(2z^2-6)]+[8z^2-(5z-z^2)]+2z^2$

a. $10z^2-16z$
b. $6z^2-4z$
c. $8z^2-16z$
d. $6z^2-10z$
e. NOTA

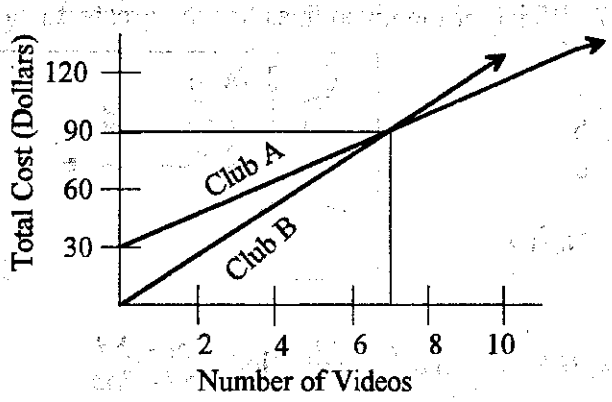
26. If $a*b=2a^2-3ab^2$, find $-2*3$.

a. 62
b. −46
c. 46
d. 68
e. NOTA

27. For what values of x is the expression below undefined?

$$\frac{x^2-3x-10}{x^2-25}\cdot\frac{35+2x-x^2}{x^2-7x-18}$$

a. $\{9\}$
b. $\{-5,-2,5,7,9\}$
c. $\{-5,-2,5,9\}$
d. $\{-5,-2,9\}$
e. NOTA



28. Note: Graphs are linear functions.

The graph shows the costs of buying videos through two clubs, A and B. Which of the following statements must be false?

a. Club A charges a membership fee.
b. The slope represents the ratio of number of videos to total cost.
c. The graph of club B can be represented by the equation $y=\frac{90}{7}x$.
d. It is cheaper to rent from Club A if you purchase more than 7 videos.
e. NOTA

29. The absolute value of $x-3$ is less than the distance from $(2,5)$ to $(-1,9)$. Solve for x

a. $x<8$
b. $-1<x<6$
c. $3-\sqrt{17}<x<3+\sqrt{17}$
d. $-2<x<8$
e. NOTA

30. $\sqrt{\frac{2}{3}}+\sqrt{\frac{1}{6}}+\sqrt{\frac{2}{5}}+\sqrt{\frac{5}{2}}=\frac{15\sqrt{a}+b\sqrt{c}}{d}$
Find $a+b+c+d$.

a. 38
b. 54
c. 67
d. 83
e. NOTA