

ALGEBRA 2 INDIVIDUAL

NOTA is defined as “None of the Above Answers is Correct”

1. Solve: $x^2 + 4x \leq -4$

- A. $\{x \mid x \leq -2\}$ B. $\{x \mid x \geq -2\}$ C. $\{x \mid x = -2\}$ D. $\{x \mid -2 \leq x \leq 2\}$ E. NOTA

2. Find the coordinates of the vertex of the parabola : $y^2 - 4y + 1 = -3x$

- A. (4,-3) B. (-2,1) C. (1,2) D. (-2,-1) E. NOTA

3. Find the circumference of a circle whose equations is : $x^2 + y^2 - 6y - 7 = 0$

- A. 16π B. 32π C. 8π D. 4π E. NOTA

4. Find the remainder when $x^3 - 5x^2 + 7$ is divided by $x + 2$

- A. 0 B. -21 C. 7 D. 3.5 E. NOTA

5. Find the sum of the coefficients in the expansion of: $(3x - 4y)^7$

- A. -1 B. 2715 C. 34 D. 512 E. NOTA

6. Simplify: $\frac{\frac{2-x^2}{5}}{\frac{x+\sqrt{2}}{20}}$

- A. $\frac{4x^3 + 4x^2\sqrt{2} - 8x - 8\sqrt{2}}{x^2 - 2}$ B. $\frac{2-x^2}{100}$ C. $\frac{5x^2 - 10}{10x + 11\sqrt{2}}$ D. $\frac{x^2 - \sqrt{2}}{4x - 3x}$ E. NOTA

7. Solve: $\left(\frac{1}{x} - 2\right)^2 + 4\left(\frac{1}{x} - 2\right) - 21 = 0$ where $x \neq 0$

- A. $\left\{2, -\frac{1}{2}\right\}$ B. $\left\{5, \frac{1}{3}\right\}$ C. $\{-1\}$ D. $\left\{-\frac{1}{5}, \frac{1}{5}\right\}$ E. NOTA

8. Write as a single logarithm: $2\log_3 5 - 3\log_3 x + \log_3 2 - \log_3 y$

- A. $\log_3 \frac{50}{x^3 y}$ B. $\log_3 \frac{50y}{x^3}$ C. $\log_3 \frac{50x^3}{y}$ D. $\log_3 \frac{x^3 y}{50}$ E. NOTA

9. One factor of $x^4 + 4$ is:

- A. x^2 B. $x^2 + 2$ C. $x^2 + 2x$ D. $x^2 + 2x + 2$ E. NOTA

ALGEBRA 2 INDIVIDUAL

10. if $z = 2 - 7i$ then $|z| =$

- A. $2 + 7i$ B. $-2 + 7i$ C. $\sqrt{53}$ D. $i\sqrt{45}$ E. NOTA

11. In a system of equations with ordered triple solution in the form (x,y,z) , Kelly correctly solved for x using

Cramer's Rule $x = \frac{\begin{vmatrix} 1 & 1 & 0 \\ -1 & 5 & 7 \\ 4 & 3 & 1 \end{vmatrix}}{\begin{vmatrix} 1 & 1 & 0 \\ -2 & 5 & 7 \\ 0 & 3 & 1 \end{vmatrix}}$. Please solve for y.

- A. $y = -\frac{1}{7}$ B. $y = \frac{3}{4}$ C. $y = 2$ D. $y = \frac{27}{14}$ E. NOTA

12. How many zeros are at the end of $1429!$

- A. 356 B. 9 C. 359 D. 355 E. NOTA

13. if $i = \sqrt{-1}$ then $(2 + 2i)^{10} =$

- A. $-35628i$ B. $1024 - 1024i$ C. $32768i$ D. $-1024 + 1024i$ E. NOTA

14. $f(x) = \sqrt[3]{\frac{2x+1}{5}}$, find $f^{-1}(x)$

- A. $f^{-1}(x) = \frac{5}{2}x^3 - \frac{1}{2}$ B. $f^{-1}(x) = \frac{2x^3+1}{125}$ C. $f^{-1}(x) = \left(\frac{2x+1}{5}\right)^3$ D. $f^{-1}(x) = \frac{5x^3-2}{x+1}$ E. NOTA

15. If $5^y = x$ then $5^{y+1} =$

- A. $x + 5$ B. $5x$ C. $x + 1$ D. x^y E. NOTA

16. Find the 8th term of $\left(x^2 + \frac{2}{x}\right)^{10}$

- A. $\frac{x+1024}{x^2}$ B. $x^{16} + \frac{256}{x^8}$ C. $\frac{15360}{x}$ D. $\frac{(x+2)^8}{x^{16}}$ E. NOTA

ALGEBRA 2 INDIVIDUAL

17. Solve: $\log(x^2 - 3x) = 1$

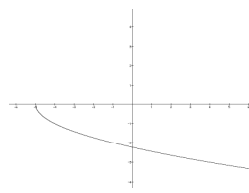
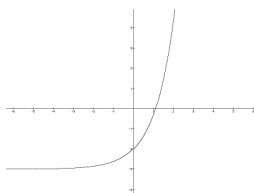
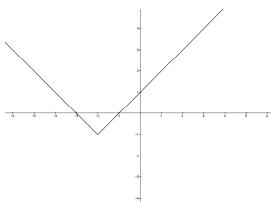
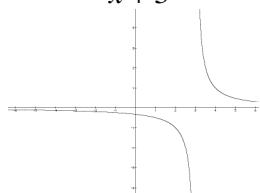
- A. $\{-2, 5\}$ B. $\{5\}$ C. $\{1, 4\}$ D. $\{10, 13\}$ E. NOTA

18. Simplify: $\sqrt[3]{32} \cdot \sqrt[6]{4}$

- A. $2\sqrt[3]{4}(\sqrt[6]{4})$ B. $2\sqrt[6]{16}$ C. $\sqrt[18]{128}$ D. 4 E. NOTA

19. Which equation DOES NOT match their graph?

- A. $y = \frac{1}{x+3}$ B. $y = |x+2| - 1$ C. $y = e^x - 3$ D. $y = -\sqrt{x+5}$ E. NOTA

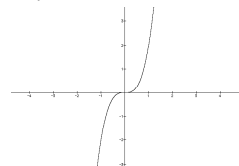
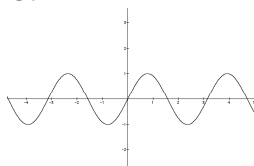
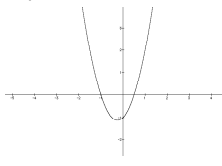
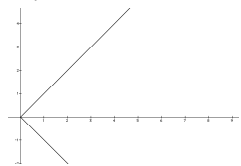


20. Find the sum of all the three digit numbers divisible by 7.

- A. 70656 B. 70031 C. 70336 D. 81526 E. NOTA

21. Which graph represents a one-to-one function?

- A. B. C. D. E. NOTA



22. In how many ways can 5 charms be arranged on a bracelet that has a clasp ?

- A. 24 B. 12 C. 60 D. 120 E. NOTA

23. Find the point that is $\frac{2}{3}$ the distance from A(-1, 3) to B(3, 9).

- A. $(\frac{5}{3}, 7)$ B. $(\frac{7}{3}, 11)$ C. (1, 9) D. $(\frac{\sqrt{13}}{3}, \frac{13\sqrt{13}}{3})$ E. NOTA

ALGEBRA 2 INDIVIDUAL

24. What is the eccentricity of the conic section : $y^2 = 5x^2 + 25$

- A. 0 B. 1 C. $\frac{\sqrt{26}}{5}$ D. $2\sqrt{6}$ E. NOTA

25. If $f(x) = x^3 + 2x^2 - x - 5$ find $f(f^{-1}(3))$

- A. -3 B. -5 C. 4 D. 0 E. NOTA

26. Solve: $3^x = \frac{\sqrt{3}}{9}$

- A. 2 B. $\frac{2}{3}$ C. .5 D. $-\frac{3}{2}$ E. NOTA

27. Three coins are tossed. What is the probability that at least one comes up TAILS ?

- A. $\frac{1}{3}$ B. $\frac{1}{6}$ C. $\frac{7}{8}$ D. $\frac{1}{8}$ E. NOTA

28. If $A = \begin{bmatrix} 1 & 0 & -2 \\ 3 & 1 & 1 \\ 4 & 1 & 0 \end{bmatrix}$, then $A^2 =$

- A. $\begin{bmatrix} 1 & 0 & 4 \\ 9 & 1 & 1 \\ 16 & 1 & 0 \end{bmatrix}$ B. $\begin{bmatrix} -7 & -2 & -2 \\ 10 & 2 & -5 \\ 7 & 1 & -7 \end{bmatrix}$ C. $\begin{bmatrix} 1 & 0 & 8 \\ 3 & 0 & 1 \\ -5 & 1 & 0 \end{bmatrix}$ D. 81 E. NOTA

29. Find the equation of the circle with center (5, -4) and radius of 7 cm.

- A. $(x+5)^2 + (y-4)^2 = 7$ B. $(x+5)^2 + (y-4)^2 = \sqrt{7}$ C. $(x-5)^2 + (y+4)^2 = 49$
D. $(x+5)^2 + (y-4)^2 = 49$ E. NOTA

30. Simplify: $\frac{x^2 - 4}{2x^2 - 5x + 2} \div \frac{2x^2 - 3x - 2}{4x^2 - 1}$

- A. $\frac{x+2}{x-2}$ B. 0 C. -1 D. $\frac{2x^2 + 1}{5x}$ E. NOTA