



MATHS

BOOKS - INDEPENDENTLY PUBLISHED

MATHS (ENGLISH)

**INTERMEDIATE ALGEBRA/COORDINATE
GEOMETRY**

Practice Question

1. If the first term in an arithmetic series is 3 and the last term is 136, and the sum is 1390, what are the first four terms ?

A. 3, 9, 27, 81

B. 3, 10, 17, 24

C. 3, 12, 36, 94

D. 3, 14 , 28, 108

Answer: B



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Exercise

1. What is the real value of x in the equation,

$$\log_2 80 - \log_2 5 = \log_3 x?$$

A. 8

B. 48

C. 75

D. 81

Answer: D



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2. In the standard (x, y) coordinate plane, the midpoint of \overline{AB} is $(8, -5)$ and B is located at $(12, -1)$. If (x, y) are the coordinates of A, what is the value of $x + y$?

A. -8

B. -7

C. -5

D. 7

Answer: C



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3. A function F is defined as follow :

$$\text{for } x > 0, F(x) = x^6 - x^3 - 17x - 17$$

$$\text{for } x < 0, F(x) = -x^6 - x^2 + 17x - 17$$

What is the value of $F(-1)$?

A. -36

B. -2

C. 0

D. 2

Answer: A



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4. For $i^2 = -1$, $(1 - 3i)^3 = ?$

A. -26

B. -8

C. $-10 + 30i$

D. $-26 + 18i$

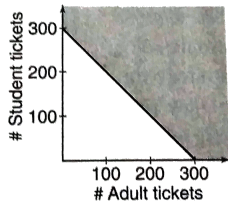
Answer: D



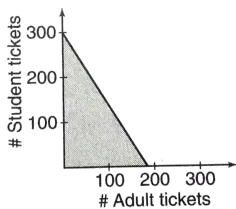
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5. Tickets to the annual Follies Show at Littleton High School are \$4 for adults and \$2.50 for students. There is a cost of \$750 to produce the show. If the x-axis represents the number of adult tickets sold and the y-axis represents the number of student tickets sold, which graph represents all the possible combinations of ticket sales that allow the junior class to at least cover the cost of the show?

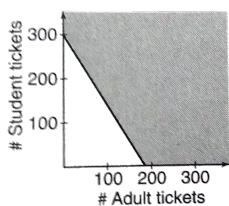
A.



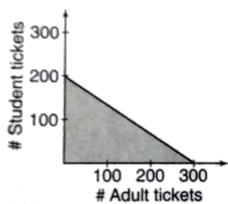
B.



C.



D.



Answer: C



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6. What are the real solutions of

$$2|x|^2 + 4|x| - 6 = 0?$$

A. {1}

B. {-1,1}

C. {1,-3}

D. {1,3}

Answer: B



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7. The sum of the real numbers x and y is 17.

Their difference is 3. What is the value of xy ?

A. -140

B. -60

C. 11

D. 70

Answer: D



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8. For all $x > 5$, $\frac{5x^2 - x^3}{x^2 - x - 20} = ?$

A. $\frac{-x^2}{x + 4}$

B. $\frac{x^2}{x + 4}$

C. $\frac{-5 + x}{20}$

D. $\frac{5x - x^2}{x - 19}$

Answer: A



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9. A circle in the standard (x,y) coordinate plane has center $(5, -3)$ and radius 4 units. Which of the following equations represents this circle?

A. $(x + 5)^2 + (y - 3)^2 = 4$

B. $(x - 5)^2 + (y + 3)^2 = 4$

C. $(x - 5)^2 + (y + 3)^2 = 8$

D. $(x - 5)^2 + (y + 3)^2 = 16$

Answer: D



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10. Consider the functions $f(x) = \sqrt{x}$ and $g(x) = x^2 - b$. In the standard (x, y) coordinate plane, $y = f(g(x))$ passes through the point $(3, 5)$. What is the value of b ?

A. 16

B. 4

C. -2

D. -16

Answer: D



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11. For what value of k does $4x^2 + kx + 25 = 0$ have exactly one real solution for x ?

A. 5

B. 10

C. 15

D. 20

Answer: D



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12. What is the slope of the line through $(-3,7)$ and $(2,5)$ in the standard (x, y) coordinate plane ?

A. $-\frac{5}{2}$

B. $-\frac{2}{5}$

C. undefined

D. $\frac{2}{5}$

Answer: B



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