

# MATH Exam Paper

## Subjective Questions

1. What is the Pythagorean theorem and explain its application?

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Answer:

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2. Derive the quadratic formula from the general form of a quadratic equation.

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Answer:

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3. Explain the concept of limits in calculus.

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Answer:

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4. Solve the following system of equations using substitution method:  $2x + y = 10$  and  $3x - y = 5$ .

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Answer:

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5. What are eigenvalues and eigenvectors? Provide an example.

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Answer:

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6. Describe the difference between permutations and combinations.

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Answer:

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7. What is the fundamental theorem of algebra?

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Answer:

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8. Explain how the binomial theorem can be used to expand expressions.

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Answer:

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9. Find the derivative of the function  $f(x) = x^3 + 5x^2 - 2x + 7$ .

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Answer:

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10. Explain the concept of mathematical induction and prove the sum formula for the first  $n$  integers.

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Answer:

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11. Formula of circle?

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Answer:

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12. What is the formula of a triangle?

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Answer:

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### MCQ Questions

13. What is  $2 + 2$ ?

a) 4

b) 5

c) 6

d) 7

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14. What is  $5 * 6$ ?

a) 25

b) 30

c) 35

d) 40

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15. What is the square root of 16?

a) 2

b) 4

c) 6

d) 8

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16. What is  $12 \div 4$ ?

a) 2

b) 3

c) 4

d) 5

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17. What is  $9 + 10$ ?

a) 18

b) 19

c) 20

d) 21

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