Mental Maths Worksheet for Class 11

Contents

A Mental Maths worksheet for class 11 is a type of learning resource that students can use to develop and improve their mathematical skills. This type of worksheet is designed to challenge students' mental arithmetic and problem-solving abilities by requiring them to solve math problems quickly and accurately. The worksheet may include a variety of mathematical concepts, including basic operations such as addition, subtraction, multiplication, and division, as well as more advanced topics like algebra, geometry, and trigonometry. Mental Maths worksheet for class 11 can be a useful tool for students who are preparing for exams, or who want to improve their overall mathematical proficiency.

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1. In 3-D geometry, what is the formula for the volume of a sphere?

a) $V = 4/3 * \pi * r^3$
b) $V = 1/3 * \pi * r^2$
c) $V = 2 * \pi * r^2$
d) $V = \pi * r^2$

Answer: a) $V = 4/3 * \pi * r^3$

Explanation: The formula for the volume of a sphere is $V = 4/3 * \pi * r^3$, where r is the radius of the sphere.

2. In statistics, what is the formula for calculating the mean of a set of data?

a) Mean = (sum of all values) / (number of values)
b) Mean = (sum of all values) * (number of values)
c) Mean = (sum of all values) + (number of values)
d) Mean = (sum of all values) - (number of values)

Answer: a) Mean = (sum of all values) / (number of values)

Explanation: The mean of a set of data is calculated by adding up all the values and dividing by the number of values.

3. In managing money, what is the formula for calculating simple interest?

a) Simple Interest = (Principal * Rate * Time) / 100

b) Simple Interest = (Principal * Rate * Time)

c) Simple Interest = (Principal / Rate * Time)

d) Simple Interest = (Principal + Rate * Time)

Answer: a) Simple Interest = (Principal * Rate * Time) / 100

Explanation: Simple interest is calculated by multiplying the principal, rate and time and then dividing by 100.

4. In relations and patterns, what is the formula for finding the nth term of an arithmetic sequence?

a) Tn = a + (n-1) d

b) Tn = a * (n-1) d

c) Tn = a / (n-1) d

d) Tn = a - (n-1) d

Answer: a) Tn = a + (n-1) d

Explanation: The nth term of an arithmetic sequence can be found using the formula Tn = a + (n-1)d, where a is the first term, d is a common difference and n is the term number.

5. In 3-D geometry, what is the formula for finding the surface area of a cube?

a) Surface area = $6a^2$

b) Surface area = $4a^2$

c) Surface area = $2a^2$

d) Surface area = a^2

Answer: a) Surface area = $6a^2$

Explanation: The surface area of a cube can be found by multiplying the area of one face by the number of faces. Since a cube has 6 faces, each with an area of a^2, the surface area is $6a^2$.

6. What is the value of sin 60º?

a) 0.5

b) 0.8660

c) 1.7320

d) 0.86

Answer: b) 0.8660

Explanation: Sin 60º is equal to the square root of 3 divided by 2.

7. What is the value of cos 30º?

a) 1.7320

b) 0.8660

c) 0.5

d) 0.86

Answer: c) 0.5

Explanation: Cos 30 degrees is equal to half of the square root of 2.

8. What is the value of tan 45º?

a) 0.86

b) 1.7320

c) 0.5

d) 1

Answer: d) 1

Explanation: Tan 45º is equal to 1.

9. What is the value of cot 45°?

a) 0.86

b) 0.5

c) 1.7320

d) 1

Answer: d) 1

Explanation: Cot 45° is equal to 1.

10. What is the value of sec 60°?

a) 1.7320

b) 2

c) 0.8660

d) 0.5

Answer: b) 2

Explanation: Sec 60° is equal to 2.

11. What is the value of cosec 30°?

a) 2

b) 1.7320

c) 0.8660

d) 0.5

Answer: a) 2

Explanation: Cosec 30° is equal to 2.

12. What is the value of sin 90⁰?

a) 0.8660

b) 0.5

c) 1.7320

d) 1

Answer: d) 1

Explanation: Sin 90⁰ is equal to 1.

13. What is the value of cos 90⁰?

a) 0.8660

b) 0

c) 1.7320

d) 0.5

Answer: b) 0

Explanation: Cos 90⁰ is equal to 0.

14. What is the value of tan 90⁰?

a) Undefined

b) 0

c) 1.7320

d) 0.8660

Answer: a) Undefined

Explanation: Tan 90⁰ is undefined.

15. What is the value of cot 90º?

a) 0

b) Undefined

c) 1.7320

d) 0.8660

Answer: b) Undefined

Explanation: Cot 90º is undefined.

Solve

1. In a right triangle, the sine of one angle is equal to:

a) the cosine of the other angle

b) the tangent of the other angle

c) the hypotenuse of the triangle

d) None of the above

2. What is the formula for finding the volume of a cube?

a) V = lwh

b) $V = s^3$

c) V = bh

d) $V = \pi r^2 h$

3. The equation y = mx + b represents a:

a) circle

b) sphere

c) line

d) square

4. Which of the following is NOT a statistical method?

a) Mean

b) Median

c) Mode

d) Rounding

5. In a given sequence, the 8th term is equal to 64. If the common difference is 8, what is the first term?

a) 8

b) 16

c) 32

d) 64

6. What is the formula for finding the simple interest on a loan of P dollars for t years at a rate of r?

a) $P(1 + rt)$

b) $P + rt$

c) Prt

d) $Prt / 100$

7. In a budget, what is the difference between fixed expenses and variable expenses?

a) Fixed expenses are constant, while variable expenses change from month to month.

b) Fixed expenses change from month to month, while variable expenses are constant.

c) Both fixed expenses and variable expenses are constant.

d) Both fixed expenses and variable expenses change from month to month.

8. A pattern is described as follows: "Add 2 to the previous term to get the next term." What is the 10th term in this pattern?

a) 18

b) 20

c) 22

d) 24

9. What is the formula for finding the distance between two points (x1, y1) and (x2, y2) in a 2-D plane?

a) $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

b) $d = (x_2 - x_1) + (y_2 - y_1)$

c) $d = (x_2 - x_1)(y_2 - y_1)$

d) $d = (x_2 - x_1) / (y_2 - y_1)$

10. In a given set of data, which measure of central tendency represents the value that occurs most frequently?

a) Mean

b) Median

c) Mode

d) Range

Answers

1. a) the cosine of the other angle

2. b) $V = s^3$

3. c) line

4. d) Rounding

5. b) 16

6. c) Prt

7. a) Fixed expenses are constant, while variable expenses change from month to month.

8. d) 24

9. a) $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

10. c) Mode

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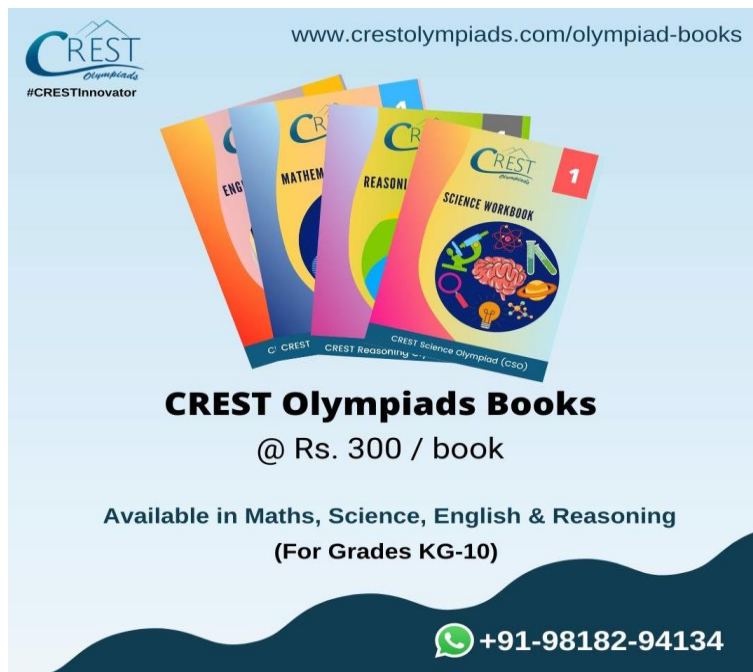
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