

1) A recipe requires 2.5 cups of flour for every 4 servings. How many cups of flour are needed for 10 servings?

- a) 5
- b) 6
- c) 6.25
- d) 6.5

Correct answer: c) 6.25



2) John runs a marathon at a speed of 8.5 km/h. How far will he run in 3.2 hours?

- a) 26.2 km
- b) 27.2 km
- c) 27.6 km
- d) 28.2 km

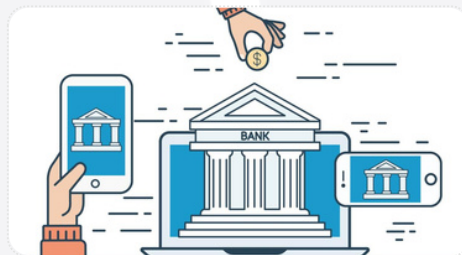
Correct answer: b) 27.2 km



3) A bank account earns 5% annual compound interest. If you deposit \$1,000, how much will you have after 2 years?

- a) \$1,050
- b) \$1,100
- c) \$1,102.50
- d) \$1,105

Correct answer: c) \$1,102.50



4) A population of bacteria doubles every 3 hours. If there are initially 200 bacteria, how many will there be after 9 hours?

- a) 400
- b) 600
- c) 800
- d) 1,600

Correct answer: d) 1,600



5) A 120° arc of a circle has a radius of 7 cm. What is the length of the arc?

- a) 400
- b) 600
- c) 800
- d) 1,600

Correct answer: d) 1,600

5) A 120° arc of a circle has a radius of 7 cm. What is the length of the arc?

- a) 14.66 cm
- b) 15.4 cm
- c) 16.6 cm
- d) 18.4 cm

Correct answer: a) 14.66 cm

6) A wheel makes 360° turns. If the radius of the wheel is 0.5 m, how far does the wheel travel in one full rotation?

- a) 1.57 m
- b) 3.14 m
- c) 3.5 m
- d) 6.28 m

Correct answer: b) 3.14 m

7) A chord is 8 cm from the center of a circle with a radius of 10 cm. What is the length of the chord?

- a) 10 cm
- b) 12 cm
- c) 14 cm
- d) 16 cm

Correct answer: c) 14 cm

8) A family spends \$1,200, \$1,500, \$1,800, and \$2,000 on groceries over four months. What is the mean monthly expense?

- a) \$1,500
- b) \$1,625

- c) \$1,700
- d) \$1,750

Correct answer: b) \$1,625

9) A clock's minute hand is 10 cm long. What is the distance it covers in 1 hour?

- a) 31.4 cm
- b) 62.8 cm
- c) 94.2 cm
- d) 125.6 cm



Correct answer: b) 62.8 cm

10) A cyclist travels 3 laps around a circular track with a radius of 100 m. How far does the cyclist travel?

- a) 1,884 m
- b) 1,900 m
- c) 1,950 m
- d) 2,000 m



Correct answer: a) 1,884 m

11) A pilot flies from point A to point B, which are 300 km apart, at an angle of 60° . Using the Law of Cosines, calculate the distance from point A to point C if the plane then flies 400 km to point C at an angle of 90° .

- a) 500 km
- b) 520 km
- c) 540 km
- d) 560 km



Correct answer: b) 520 km

12) A phone's battery drains at a rate modeled by 100×0.9^t , where t is the time in hours. How much charge remains after 3 hours?

- a) 50%
- b) 60%
- c) 72.9%

d) 75%

Correct answer: c) 72.9%

13) A pizza is divided into 12 equal slices. Each slice represents what angle at the center of the pizza?

- a) 15°
- b) 30°
- c) 45°
- d) 60°



Correct answer: b) 30°

14) A sports team scores 10, 12, 15, 15, and 18 points in five games. What is the mode of their scores?

- a) 10
- b) 12
- c) 15
- d) 18

Correct answer: c) 15

15) A group of friends earns the following pocket money in dollars: 20, 25, 30, 40, and 100. What is the median?

- a) 25
- b) 30
- c) 35
- d) 40

Correct answer: b) 30

16) If the sound intensity of a speaker increases from 10 to 100 times the base level, how many decibels louder is it? (Hint: Use $\log 10$)

- a) 10 dB
- b) 20 dB
- c) 30 dB
- d) 40 dB

Correct answer: b) 20 dB

17) Two hikers start at the same point. One walks 6 km due east, and the other walks 8 km northeast, making a 45° angle with the first hiker's path. How far apart are they?

- a) 10 km
- b) 11 km
- c) 12 km
- d) 13 km



Correct answer: b) 11 km

18) If the Richter scale measures an earthquake of magnitude 5 as 10 times stronger than one of magnitude 4, how much stronger is a magnitude 7 earthquake than a magnitude 4 earthquake?

- a) 100 times
- b) 1,000 times
- c) 10,000 times
- d) 100,000 times

Correct answer: b) 1,000 times

19) A ball is thrown upward, and its height h in meters after t seconds is given by $h(t) = -5t^2 + 20t$. What is the maximum height the ball reaches?

- a) 15 m
- b) 20 m
- c) 25 m
- d) 30 m

Correct answer: c) 25 m

20) A pyramid has a square base with side length 10 m and a slant height of 13 m. What is its total surface area?

- a) 130 m^2
- b) 260 m^2
- c) 300 m^2
- d) 360 m^2

Correct answer: d) 360 m²

21) A sphere has a radius of 4 m. What is its surface area?

- a) 200.96 m²
- b) 201.06 m²
- c) 210.56 m²
- d) 211.04 m²

Correct answer: a) 200.96 m²

22) A cone has a base radius of 7 cm and a slant height of 10 cm. What is the lateral surface area of the cone?

- a) 154 cm²
- b) 220 cm²
- c) 260 cm²
- d) 300 cm²

Correct answer: b) 220 cm²

23) A cylindrical container is 10 cm tall with a radius of 5 cm. A cone with the same radius and height is placed inside. What percentage of the cylinder's volume is occupied by the cone?

- a) 25%
- b) 33.3%
- c) 50%
- d) 66.6%

Correct answer: b) 33.3%

24) The diameter of a sphere is 14 cm. What is its surface area?

- a) 528 cm²
- b) 532 cm²
- c) 616 cm²
- d) 624 cm²

Correct answer: c) 616 cm²



25) A solar panel generates 32 watts per hour. How much energy will it produce in 5 hours?

- a) 15 watts
- b) 25 watts
- c) 45 watts
- d) 225 watts



Correct answer: c) 45 watts

26) A basketball player practices for 23 hours every week. How many hours does she practice in a month (4 weeks)?

- a) 16 hours
- b) 24 hours
- c) 32 hours
- d) 64 hours



Correct answer: c) 32 hours

27) A circular pool has a diameter of 14 meters. What is the area of the pool?

- a) 154 m^2
- b) 176 m^2
- c) 196 m^2
- d) 210 m^2

Correct answer: a) 154 m^2

28) A farmer wants to fence a circular garden with a radius of 21 m. What is the total length of the fence needed?

- a) 124.4 m
- b) 131.9 m
- c) 132.0 m
- d) 138.5 m

Correct answer: c) 132.0 m

29) A circular pizza has a radius of 8 inches. If 25% is eaten, what is the remaining area?

- a) 150.72 in^2
- b) 150.8 in^2
- c) 153.6 in^2
- d) 157.9 in^2

Correct answer: a) 150.72 in^2

30) A ship sails 10 km north and then 15 km east. What is the direct distance between the starting point and the ship's final position?

- a) 18 km
- b) 19 km
- c) 20 km
- d) 25 km

Correct answer: a) 18 km