



St Albans High School
— for Girls —



11+ Entrance Examination
In
Mathematics Specimen Paper

1 Hour and 15 Minutes

INSTRUCTIONS

- 1 DO NOT OPEN THIS PAPER UNTIL YOU ARE TOLD THAT THE EXAMINATION HAS STARTED.
- 2 There are 32 questions in the paper. Always check that you have turned over the page and that you have not missed any pages.
- 3 You will need to work steadily but quickly, taking care to be as accurate as possible.
- 4 You may write in pencil or pen.

1. Simplify the following expression:

$$5 \times (3 + 2) - 4^2 + 8$$

Answer:

2. Solve for x in the equation:

$$3x + 5 = 2(x - 4)$$

Answer:

3. The sum of three consecutive integers is 72. Find the integers.

Answer:

4. A number is divisible by both 3 and 4. What is the smallest possible number that satisfies this condition?

Answer:

5. What is the value of $\frac{3}{4} \times \frac{5}{6}$?

Answer:

6. Find the greatest common divisor (GCD) of 48 and 180.

Answer:

7. What is the least common multiple (LCM) of 12 and 15?

Answer:

8. Expand and simplify:

$$(x + 2)(x - 3)$$

Answer:

9. Solve for x in the quadratic equation:

$$x^2 - 5x + 6 = 0$$

Answer:

10. Simplify the following expression:

$$\frac{(4x^2 - 9)}{(2x + 3)}$$

Answer:

11. Factorize:

$$4x^2 - 12x + 9$$

Answer:

12. Solve for x:

$$2x + 5 = 3x - 7$$

Answer:

13. Find the roots of the equation:

$$3x^2 - 6x = 0$$

Answer:

14. If $2x + 3 = 7$, what is the value of x?

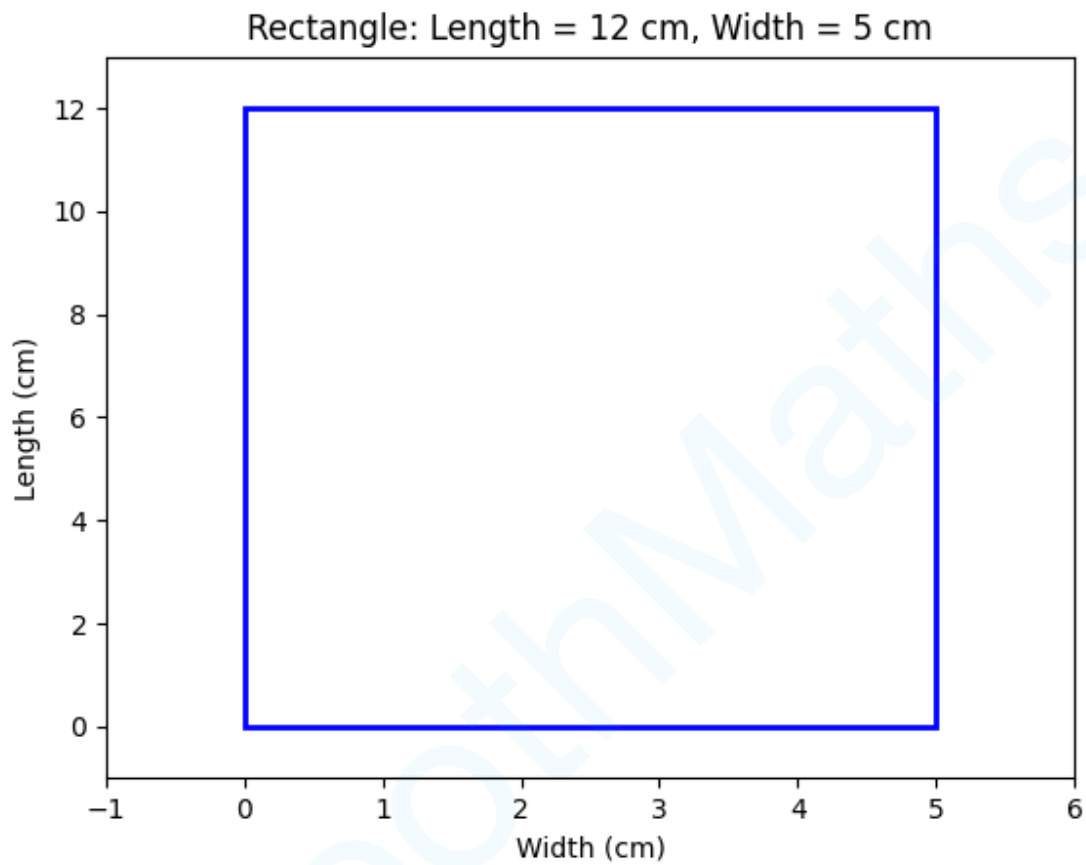
Answer:

15. Solve for x:

$$5(x - 1) = 2(x + 3)$$

Answer:

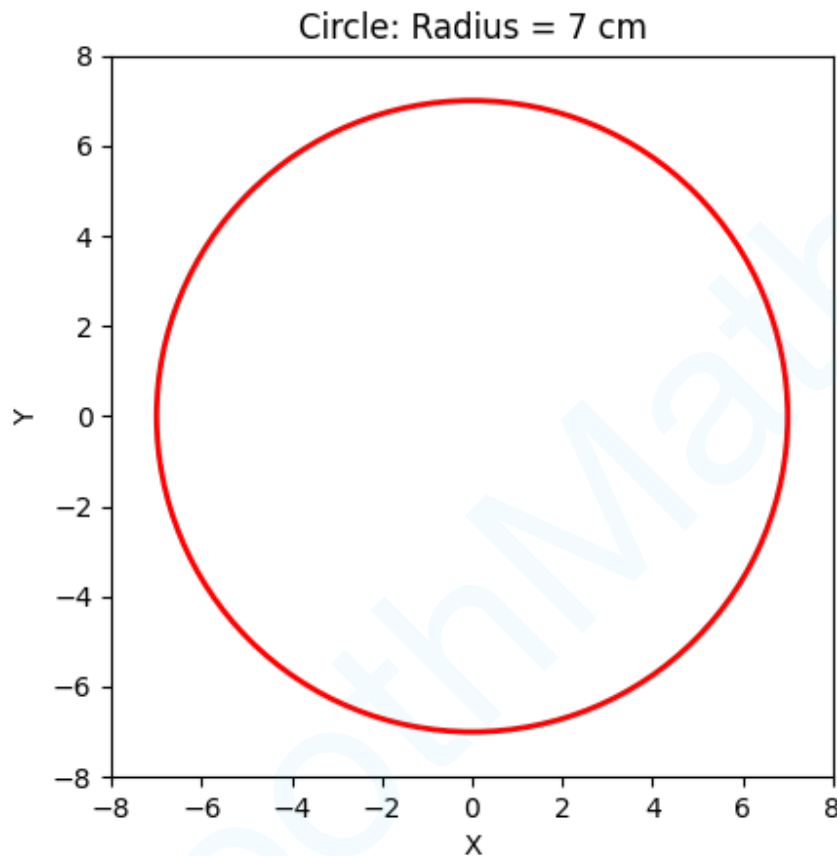
16. A rectangle has a length of 12 cm and a width of 5 cm. Find its perimeter and area.



Answer:

17. A circle has a radius of 7 cm. Find the area of the circle. (Use $\pi = 3.14$)

Area of a circle = πr^2 :

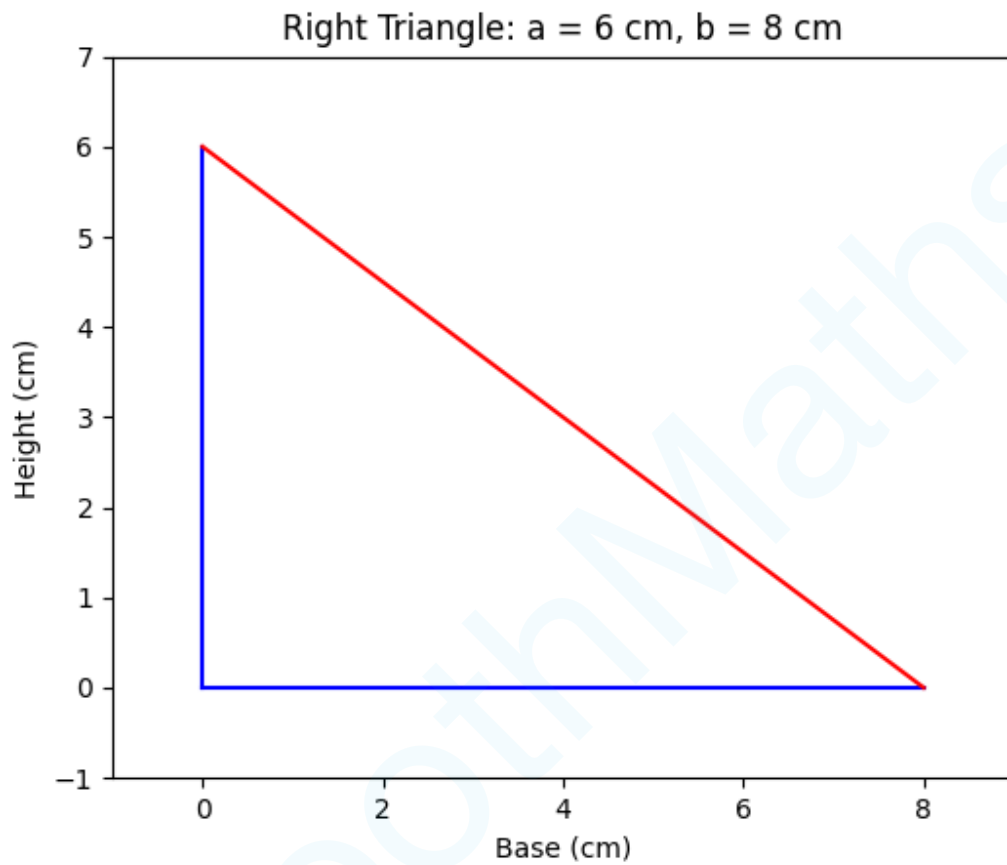


Answer:

18. The angles of a triangle are in the ratio 3:4:5. Find the angles of the triangle.

Answer:

19. A right-angled triangle has legs of lengths 6 cm and 8 cm. Find the length of the hypotenuse.



Answer:

20. A square has an area of 64 cm^2 . What is the length of each side?

Answer:

21. A cylindrical jar has a radius of 5 cm and a height of 10 cm. Find its volume. (Use $\pi = 3.14$)

Answer:

22. In a triangle, one angle is 90° and the other two angles are equal. What are the measures of the other two angles?

Answer:

23. Find circumference of a circle with a radius of 14 cm. (Use $\pi = 3.14$)

Answer:

24. A train travels at a speed of 60 km/h for 3 hours. How far does the train travel?

Answer:

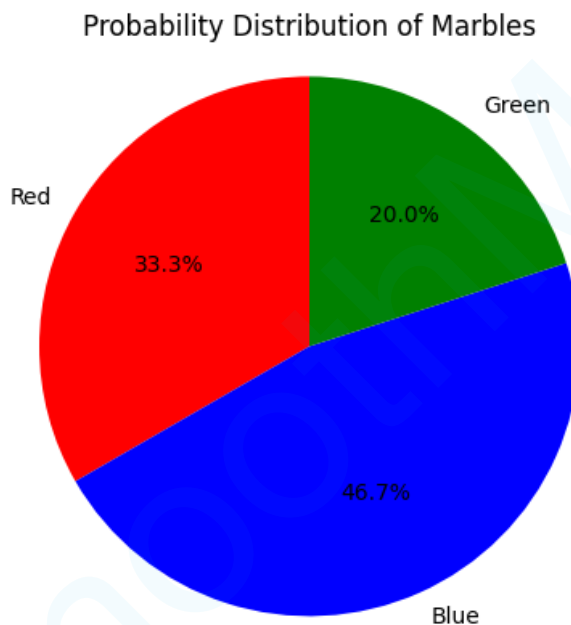
25. A class has 30 students. The ratio of boys to girls in the class is 2:3. How many boys and how many girls are there?

Answer:

26. A shop offers a 25% discount on a jacket originally priced at £80. How much does the jacket cost after the discount?

Answer:

27. A box contains 5 red, 7 blue, and 3 green marbles. If one marble is picked at random, what is the probability that it is blue?



Answer:

28. A bag contains 4 white balls and 6 black balls. If one ball is picked at random, what is the probability that it is not white?

Answer:

29. A recipe requires 2 cups of sugar for every 3 cups of flour. If you have 8 cups of sugar, how many cups of flour will you need?

Answer:

30. A car travels 180 km in 3 hours. What is the average speed of the car?

Answer: