MATHS

BOOKS - V PUBLICATION

PROPORTION

Questionbank

1. In rectangles of area one square metre, as the length of one side changes, so does the length of the other side. Write the relation

between the lengths as an algebraic equation. How do we say this in the language of proportions?

2. In regular polygons, what is the relation between the riumber of sides and the degree measure of an internal angle? Can it be 'stated in terms of proportion? Take number of sides as x and measure of an internal angle as y.

3. In the semicircle shown, the top chord Is parallel to the diameter. What is its length?

4. The perimeter of a square is P.

a) What is the length of its sides?

b) If the area is taken as A, write the relation between A and P.

5. By taking, the radius of circles as r and area as A,

a) write the relation between r and A.

b). Whether the area is proportional to the radius? Explain.

6. Area of an'equilateral triangle is $\sqrt{3}\dfrac{a^2}{4}$, where 'a' is the length of one side. Which of the following statements is true?

a) Area' is proportional to a and the proportionality constant is $\frac{\sqrt{3}}{4}$:

b) Area is proportional to a^2 and the proportionality constant is $\frac{\sqrt{3}}{4}$.

c) Area is proportional to $\frac{\sqrt{3}}{4}$ and the proportionality constant is a^2

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7. The most beautiful rectangles are golden rectangles. For these golden recţangles ratio of the length and breadth are always

$1 + \sqrt{5} : 2.$

a) What is the length of a golden rectangle is its breadth is $10cm$?

b) If the length is l and breadth is b, write the relation between length and breadth as an equation.

c) Whether the length and breadth of golden rectangle are proportional? What is the proportionality constant.

8. a) What is the sum of the outer angles of . a regular.polygon having n sides?

b) If the measure of one outer angle is x^σ, write the relatiori' between x and' n as an.equation.

c) Whether x and n are in direct or inverse. proportion?

d) What is the proportionality cónstant?

9. The following table show's the distance travelled by a freely falling body and the time taken.

a) What is the time taken by it to travel 16 . 49 meter?

b) How much distance does it travelin 10 seconds?

c) Write the relation betweén s and t as an . equation.

d) Which measures are in proportion? What is the constant of proportionality?

10. The speed of an object falling downwards is proportional to the time of travel. The speed at 5 seconds is 49 metres/second. What is the speed at 6 seconds? `

11. The diagonal of a square is 4 centimetres. What is its area?

a) What is the general relation between the

length of the diagonal of a square. and its area?

b) How do we state this relation in terms of proportion?

c) What is the constant of proportionality in this relation? `

12. The length of a diagonal of square is $4cm$.

a) What is its area?

b) The length of a diagonal of a square is d

units and its area is A sq.units. Write the relation between them?

c) Which is the proportionality constant?

13. The lengths of the sides of two rectangles are proportional. The length and breadth of the smaller are $12cm$ and $4cm$ respectively. The length of the larger rectangle is $18cm$.

a) Write the ratio between the sides of the

smaller rectangle.

b) What is the breadth of the larger rectangle?

14. Arun and Asha jointly made regular polygons with sides $5{\sim}cm$ to participate in Maths fiar.

a) What is the perimeter of a regular hexagon. Which they had made?

b) What is the perimeter of a n sides regular polygons?

c) In any regular polygons is the perimeter is proportional to the length of its side? If so what is the proportionality constant?