

CASE STUDY

- 
- (Cuboid Geometry Box)
- (Rectangular Photo Frame)
- (Circular Cardboard)

Q 1. If the area of circular cardboard is $49\pi x^2 + 70\pi x + 25\pi$, what is the radius of this object?

- Q 2.** If the volume of geometry box is $x^3 - 2x^2 - x + 2$, then the possible dimensions of this box are:

- Q 3.** If the area of a file is $4x^2 + 4x + 1$, what is the perimeter of this file?

- Q 4.** If the area of rectangular photo frame is $12x^2 - 7x + 1$, what are the possible dimensions of photo frame?

- Q 5.** If the volume of cube is $8a^3 - b^3 - 12a^2b + 6ab^2$, what is the side of cube?

- a. $(2a + b)$ b. $(2a - b)$
c. $(2a + 3b)$ d. $(3a - 2b)$

2. Nari Niketan is an organisation to help the women and child having distress. Swati donated some amount to this organisation for betterment. The amount of donation is represented by the expression $\text{₹ } 4x^2 + \frac{1}{4x^2}$. She also discussed her friends about this organisation. Some of her friends wanted to know the amount of donation, but she did not disclose this amount to anyone. Some how her friend got to know that she gave amount having expression $\left(2x + \frac{1}{2x}\right)$, whose value is ₹ 90.



Q 1. The amount donated by Swati in the expression form is:

- a. linear equation b. quadratic equation
c. algebraic expression d. polynomial

Q 2. If $x = \sqrt{2}$, then the amount donated by Swati is:

- a. ₹ 8 b. ₹ 8.125 c. ₹ 8.75 d. ₹ 9

Q 3. The value of $\left(2x + \frac{1}{2x}\right)^2$ is:

- a. 8000 b. 8100 c. 8200 d. 8300

Q 4. The amount donated by Swati (in ₹) is:

- a. ₹ 9020 b. ₹ 8096 c. ₹ 8090 d. ₹ 9000

Q 5. If $x = 5$, then the value of donated expression is:

- a. $\frac{10001}{100}$ b. $\frac{1003}{100}$ c. $\frac{999}{100}$ d. $\frac{10005}{100}$