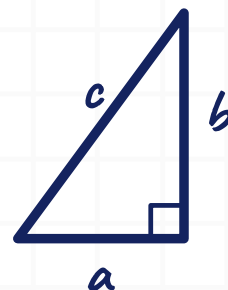
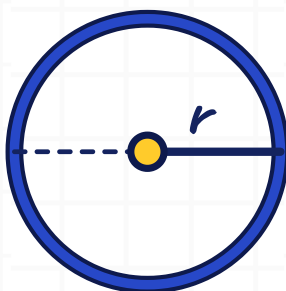


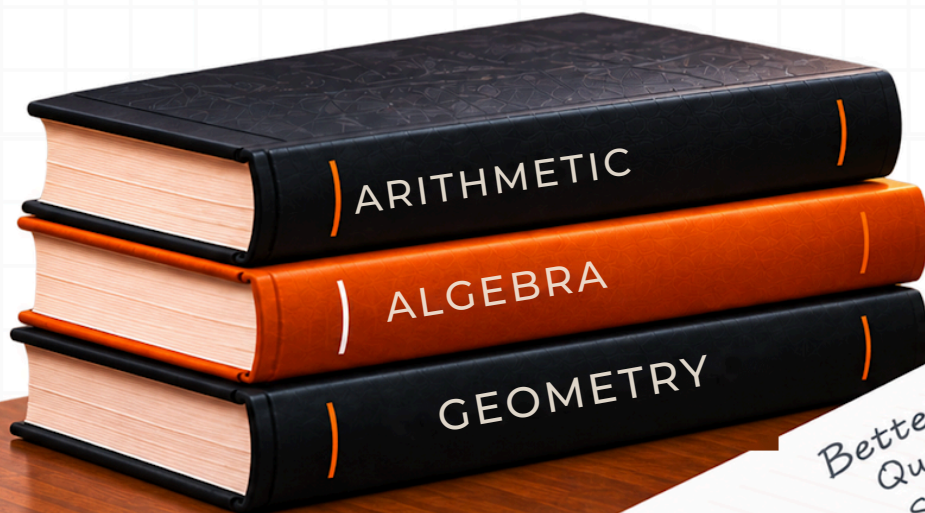
CAT PYQ

Polynomials

$$a^2 + b^2 = c^2$$



$$D = S \times T$$



Better
Questions
Stronger
Concepts
Brighter Future

11 Questions

Quantitative Aptitude

Years: 1990-2022

General Instructions

- (i) This collection contains **11 Quantitative Aptitude questions** classified under **Polynomials**, following the supplied CD PYQ sheet.
- (ii) **Coverage:** CAT 1990-2022. Questions are grouped by their source year and sitting, with continuous numbering from **1 to 11**.
- (iii) This collection has **11 multiple choice questions (MCQs)**. Read every option before choosing the answer.
- (iv) Original mathematical expressions, question wording and option order are retained. Use the diagrams and data provided with each question.
- (v) Each question carries its original year or exam date, sitting where available, and source question number. References distinguish the two CAT 2003 sittings.
- (vi) Use this collection for practice. Follow the timing and marking scheme of the original sitting when attempting a timed exercise.
- (vii) Answer keys and solutions are not included. Passages and questions may continue onto the following page.

CAT 2022 Slot 2 - Questions 1-1

1. Let r and c be real numbers. If r and $-r$ are roots of $5x^3 + cx^2 - 10x + 9 = 0$, then c equals

27 Nov 2022, Slot 2, Q51

(A) $-\frac{9}{2}$

(B) $\frac{9}{2}$

(C) -4

(D) 4

CAT 2019 Slot 1 - Questions 2-2

2. The product of two positive numbers is 616. If the ratio of the difference of their cubes to the cube of their difference is 157:3, then the sum of the two numbers is

24 Nov 2019, Slot 1, Q79

(A) 58

(B) 85

(C) 50

(D) 95

CAT 2008 - Questions 3-3

3. If the roots of the equation $x^3 - ax^2 + bx - c = 0$ are three consecutive integers, then what is the smallest possible value of b ?

16 Nov 2008, Q3

(A) $\frac{-1}{\sqrt{3}}$

(B) -1

(C) 0

(D) 1

(E) $\frac{1}{\sqrt{3}}$

CAT 2004 - Questions 4-4

4. If $f(x) = x^3 - 4x + p$, and $f(0)$ and $f(1)$ are of opposite signs, then which of the following is necessarily true [CAT 2004]

21 Nov 2004, Q44

- (A) $-1 < p < 2$ (B) $0 < p < 3$
(C) $-2 < p < 1$ (D) $-3 < p < 0$
-

5. The number of roots common between the two equations $x^3 + 3x^2 + 4x + 5 = 0$ and $x^3 + 2x^2 + 7x + 3 = 0$ is

15 Feb 2004, CAT 2003 Re-test, Q82

(A) 0

(B) 1

(C) 2

(D) 3

CAT 2002 - Questions 6-6

6. If $pqr = 1$, the value of the expression $1/(1 + p + q^{-1}) + 1/(1 + q + r^{-1}) + 1/(1 + r + p^{-1})$

CAT 2002, Q94

(A) $p+q+r$

(B) $1/(p+q+r)$

(C) 1

(D) $p^{-1} + q^{-1} + r^{-1}$

CAT 2001 - Questions 7-7

7. m is the smallest positive integer such that for any integer $n \geq m$, the quantity $n^3 - 7n^2 + 11n - 5$ is positive. What is the value of m ?

CAT 2001, Q15

(A) 4

(B) 5

(C) 8

(D) None of these

CAT 2000 - Questions 8-8

8. If the equation $x^3 - ax^2 + bx - a = 0$ has three real roots, then it must be the case that,

CAT 2000, Q100

(A) $b=1$

(B) $b \neq 1$

(C) $a=1$

(D) $a \neq 1$

CAT 1990 - Questions 9-11

9. The value of $\frac{1}{1-x} + \frac{1}{1+x} + \frac{2}{1+x^2} + \frac{4}{1+x^4}$

CAT 1990, Q15

(A) $\frac{8}{1-x^8}$

(B) $\frac{4x}{1+x^2}$

(C) $\frac{4}{1-x^6}$

(D) $\frac{4}{1+x^4}$

10. Let a, b be any positive integers and $x = 0$ or 1 , then

CAT 1990, Q16

(A) $a^x b^{1-x} = xa + (1-x)b$

(B) $a^x b^{1-x} = (1-x)a + xb$

(C) $a^x b^{(1-x)} = a(1-x)bx$

(D) None of the above is necessarily true.

11. If $xy + yz + zx = 0$, then $(x + y + z)^2$ equals

CAT 1990, Q47

(A) $(x + y)^2 + xz$

(B) $(x + z)^2 + xy$

(C) $x^2 + y^2 + z^2$

(D) $2(xy + yz + xz)$

- End of PYQ Collection -