



Algebra Questions for SSC CGL Set-3 PDF

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature without the permission of cracku.in, application for which shall be made to support@cracku.in

Instructions

For the following questions answer them individually

Question 1

If $xy = 56$ and $x^2 + y^2 = 113$, then what will be the value of $(x + y)$?

- A 29
- B 21
- C 36
- D 15

Answer: D

Explanation:

Given : $(x^2 + y^2) = 113$ and $xy = 56$

Using $(x + y)^2 = x^2 + y^2 + 2xy$

$$\Rightarrow (x + y)^2 = 113 + (2 \times 56)$$

$$\Rightarrow (x + y)^2 = 113 + 112 = 225$$

$$\Rightarrow (x + y) = \sqrt{225} = 15$$

\Rightarrow Ans - (D)

Question 2

If $a + b = 11$ and $a^2 + b^2 = 61$, then value of ab is

- A 12
- B 96
- C 24
- D 30

Answer: D

Explanation:

Given : $(a + b) = 11$ and $a^2 + b^2 = 61$

Using $(a + b)^2 = a^2 + b^2 + 2ab$

$$\Rightarrow (11)^2 = 61 + (2 \times ab)$$

$$\Rightarrow 2ab = 121 - 61 = 60$$

$$\Rightarrow ab = \frac{60}{2} = 30$$

\Rightarrow Ans - (D)

Question 3

If $4(2x - 4) - 2 > 3x - 1 \geq 4x - 7$, then x can take which of the following values?

- A 7
- B 6
- C 2
- D 0

Answer: B

Explanation:

Expression 1 : $4(2x - 4) - 2 > 3x - 1$

$$\Rightarrow 8x - 16 - 2 > 3x - 1$$

$$\Rightarrow 8x - 3x > -1 + 18$$

$$\Rightarrow x > \frac{17}{5} \text{ -----(i)}$$

Expression 2 : $3x - 1 \geq 4x - 7$

$$\Rightarrow 4x - 3x \leq -1 + 7$$

$$\Rightarrow x \leq 6 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $\frac{17}{5} < x \leq 6$

The only value that x can take among the options = 6

\Rightarrow Ans - (B)

SSC CGL Free Mock Test (Latest Pattern)

Question 4

Factors of $48x^3 - 8x^2 - 93x - 45$ are

A $(4x + 3)(4x - 3)(3x - 5)$

B $(4x - 3)(4x - 3)(3x - 5)$

C $(4x + 3)(4x + 3)(3x - 5)$

D $(4x - 3)(4x + 3)(3x + 5)$

Answer: C

Explanation:

(A) : $(4x + 3)(4x - 3)(3x - 5)$

$$= (16x^2 - 12x + 12x - 9)(3x - 5)$$

$$= (16x^2 - 9)(3x - 5)$$

$$= 48x^3 - 80x^2 - 27x + 45$$

(B) : $(4x - 3)(4x - 3)(3x - 5)$

$$= (16x^2 - 24x + 9)(3x - 5)$$

$$= 48x^3 - 80x^2 - 72x^2 + 120x + 27x - 45$$

$$= 48x^3 - 152x^2 + 147x - 45$$

(C) : $(4x + 3)(4x + 3)(3x - 5)$

$$= (16x^2 + 24x + 9)(3x - 5)$$

$$= 48x^3 - 80x^2 + 72x^2 - 120x + 27x - 45$$

$$= 48x^3 - 8x^2 - 93x - 45$$

\Rightarrow Ans - (C)

Question 5

Divide 32 into two parts such that the sum of the square of the parts is 674. What is the value of the parts?

- A 22, 10
- B 30, 2
- C 25, 7
- D 20, 12

Answer: C

Explanation:

Let the first part = x and second part = $(32 - x)$

According to ques, $\Rightarrow (x)^2 + (32 - x)^2 = 674$

$$\Rightarrow x^2 + (x^2 + 1024 - 64x) = 674$$

$$\Rightarrow 2x^2 - 64x + 1024 - 674 = 0$$

$$\Rightarrow x^2 - 32x + 175 = 0$$

$$\Rightarrow x^2 - 25x - 7x + 175 = 0$$

$$\Rightarrow x(x - 25) - 7(x - 25) = 0$$

$$\Rightarrow (x - 25)(x - 7) = 0$$

$$\Rightarrow x = 25, 7$$

$$\Rightarrow \text{Ans} - (C)$$

Question 6

If $(4x - 5) = (3x - 1)$, then the numerical value of $(x + 4)^2$ is

- A 16
- B 64
- C 32
- D 8

Answer: B

Explanation:

Given : $(4x - 5) = (3x - 1)$

$$\Rightarrow 4x - 3x = 5 - 1$$

$$\Rightarrow x = 4$$

To find : $(x + 4)^2$

$$= (4 + 4)^2 = 8^2 = 64$$

$$\Rightarrow \text{Ans} - (B)$$

SSC CGL Previous Papers (DOWNLOAD PDF)

Question 7

If $2(3x + 5) > 4x - 5 < 3x + 2$; then x can take which of the following values?

- A -8
- B 6
- C 8
- D 10

Answer: B

Explanation:

Expression 1 : $2(3x + 5) > 4x - 5$

$$\Rightarrow 6x + 10 > 4x - 5$$

$$\Rightarrow 6x - 4x > -5 - 10$$

$$\Rightarrow 2x > -15$$

$$\Rightarrow x > \frac{-15}{2} \text{ -----(i)}$$

Expression 2 : $4x - 5 < 3x + 2$

$$\Rightarrow 4x - 3x < 2 + 5$$

$$\Rightarrow x < 7 \text{ -----(ii)}$$

Combining inequalities (i) and (ii), we get : $\frac{-15}{2} < x < 7$

The only value that x can take = 6

\Rightarrow Ans - (B)

Question 8

If $51.97 - (81.18 - x) - 59.39 = 5.268$, then value of x will be

- A 24.912
- B 68.492
- C 93.868
- D 197.808

Answer: C

Explanation:

Expression : $51.97 - (81.18 - x) - 59.39 = 5.268$

$$\Rightarrow 51.97 - 81.18 + x = 5.268 + 59.39$$

$$\Rightarrow -29.21 + x = 64.658$$

$$\Rightarrow x = 64.658 + 29.21$$

$$\Rightarrow x = 93.868$$

\Rightarrow Ans - (C)

Question 9

What should be added to $3(x-2y)$ to obtain $2(3x + y) - 5(2x + 3)$?

- A $8y - 7x - 15$
- B $8y - 7x + 15$
- C $8y + 7x + 15$

D $8y + 7x - 15$

Answer: A

Explanation:

Let m should be added to $3(x-2y)$ to obtain $2(3x+y) - 5(2x+3)$

$$\Rightarrow (m) + [3(x-2y)] = 2(3x+y) - 5(2x+3)$$

$$\Rightarrow m + 3x - 6y = 6x + 2y - 10x - 15$$

$$\Rightarrow m = (2y + 6y) + (-4x - 3x) - 15$$

$$\Rightarrow m = 8y - 7x - 15$$

\Rightarrow Ans - (A)

SSC Free Preparation App

Question 10

If $\frac{1}{6}$ of $x - \frac{7}{2}$ of $\frac{3}{7}$ equals $-\frac{7}{4}$, then the value of x is

A -1.5

B 3

C -2.5

D 6

Answer: A

Explanation:

According to ques,

$$\Rightarrow \left(\frac{1}{6} \times x\right) - \left(\frac{7}{2} \times \frac{3}{7}\right) = -\frac{7}{4}$$

$$\Rightarrow \frac{x}{6} - \frac{3}{2} = -\frac{7}{4}$$

$$\Rightarrow \frac{x}{6} = \frac{3}{2} - \frac{7}{4}$$

$$\Rightarrow \frac{x}{6} = \frac{-1}{4}$$

$$\Rightarrow x = \frac{-6}{4} = -1.5$$

\Rightarrow Ans - (A)

SSC CGL Free Mock Test (Latest Pattern)

SSC CGL Previous Papers (DOWNLOAD PDF)

SSC Free Preparation App

Download SSC General Knowledge PDF

Daily Free SSC Practice Set

General Science Notes for SSC CGL

SSC CHSL Previous Papers (DOWNLOAD PDF)

SSC CHSL Free Mock Test (Latest Pattern)

Free SSC Study Material (18,000 Solved Questions)

1500 + Free Must Solved SSC Questions (With Solutions)

SSC Exam Update Videos & Free Study Material (YouTube Channel)

Free Gk Tests

SSC CGL Tier-2 Previous Papers PDF