

APOLLO

Quadratic Equations-II

FBISE Mathematics Class 10 (SSC-II)

Domain A: Numbers and Algebra

25 questions | questions

Original FBISE question crops. National Curriculum 2022-23 topic.

Find the solution set of the equation:

$$\frac{1}{x} - \frac{11}{\sqrt{x}} = -18.$$

4

(i) Solve by using Quadratic formula

$$3(x-2)^2 = x(x-2) \text{ دوسری فارمولہ کی مدد سے حل کریں۔}$$

04

(i) Solve by factorization

$$3x^2 - 2x = (x-2)^2$$

بذریعہ تجزیہ حل کریں۔

04

Solve the equation $3x^{-2} + 5 = 8x^{-1}$

$$\text{سادات } 3x^{-2} + 5 = 8x^{-1} \text{ کو حل کریں۔}$$

04

Q.3 The sum of the coordinates of a point is 6 and sum of their squares is 20. Find the coordinates of the point.

ایک نقطہ کے محددات کا مجموعہ 6 اور ان کے مربعوں کا مجموعہ 20 ہے۔ نقطہ کے محددات معلوم

08

Q. 2 Attempt any TWELVE parts.

- (i) Identify the open sentences:
a) $7-3 > 12$ b) $3x+5x = 8x$ c) $3+5$
- (ii) Plot the points on graph paper (3,-6), (-3,-4), (4, 2).
- (iii) Plot the graph by taking only two points. $2x-5 = -13y$
- (iv) Solve the equation by factorization. $x^2 - 8px + 12p^2 = 0$

Q. 2 Attempt any TWELVE parts.

(12 x :

- (i) Identify the open sentences:
a) $7-3 > 12$ b) $3x+5x = 8x$ c) $3+5 < 2x$
- (ii) Plot the points on graph paper (3,-6), (-3,-4), (4, 2).
- (iii) Plot the graph by taking only two points. $2x-5 = -13y$
- (iv) Solve the equation by factorization. $x^2 - 8px + 12p^2 = 0$
- (v) Find the solution set of standard equation $ax^2 + bx + c = 0$ for the following values $a=2, b=-9, c=9$

Q. 2 Attempt any TWELVE parts.

- (i) Identify the open sentences:
a) $7-3 > 12$ b) $3x+5>$
- (ii) Plot the points on graph paper
- (iii) Plot the graph by taking only tv
- (iv) Solve the equation by factoriza
- (v) Find the solution set of standar
- (vi) Eliminate x by comparison met
- (vii) For what value of x , the ratio 3-
- (viii) If $x : y = 3 : 2$, the find $2x + 3y : 4$
- (ix) Find the fourth proportional of :
- (x) Find the mean proportional of 1
- (xi) A group of 10th class students c
33, 40, 58, 45, 46, 43, 45, 45, 5
44. Classify the data into a freq
Also find the class interval with
- (xii) The following are the runs mad
- | Students | Hussain | F |
|----------------------------|---------|---|
| Runs (1 st day) | 55 | 4 |
| Runs (2 nd day) | 80 | 6 |
- Draw a suitable diagram/graph
- (xiii) What is mean? Write the formu
- (xiv) Following are the earning in (R:
- (xv) Ten boys work on a petrol pum
450, 430, 450, 439. Find arithm
- (xvi) Find the third proportional of 3,
- (xvii) Factorize: $4x^2 + 2x - 6 = 0$

- (iii) مساوات کا گراف کم از کم دو نقاط لے کر بنائیں۔ $2x - 5 = -13y$
- (iv) مساوات کو بذریعہ تجزیہ حل کریں۔ $x^2 - 8px + 12p^2 = 0$

- (viii) Find the third proportional of a and b , where $a = 2, b = -9, c = 9$
- (ix) Find the solution set of the standard quadratic equation $ax^2 + bx + c = 0$ for the following values:
 $a = 2, b = -9, c = 9$
- (x) Plot the following points on graph paper $(-3, -5), (3, -6), (4, 2)$.

- (x) Plot the following points on graph
- (xi) Factorize: $2y^2 + 5y - 3 = 0$
- (xii) Plot the graph by taking two point

- (vi) ایک طالبہ کے درجات چھ امتحانوں میں 1, 68, 80
- (vii) تجزیہ کریں: $4x^2 + 2x - 6 = 0$

(x) نقطہ $(-3, -5), (3, -6), (4, 2)$ کو گراف کیجیے۔

(xi) تجزیہ کریں: $2y^2 + 5y - 3 = 0$

	Solve:	حل کریں:	
OR	$\frac{2}{x-1} + \frac{3}{x+1} = 1, x \in R$		04

15. $x^2 + 5x + 6 =$ $(x-1)(x-6)$ $(x-2)(x-3)$ $(x+1)(x+6)$ $(x+2)(x+3)$ ☐ ☐ ☐

	The sum of the squares of two consecutive integers is 85. Find the integers.	
OR	دو مسلسل مثبت اعداد کا حاصل ضرب 85 ہے۔ اعداد معلوم کریں۔	04

OR	دو مسلسل مثبت اعداد کا حاصل ضرب 85 ہے۔ اعداد معلوم کریں۔	04
OR	If $ff(x) = x + 1$ and $g(x) = x - 1$, find $g(ff(x))$ and $f(g(x))$. اگر $ff(x) = x + 1$ اور $g(x) = x - 1$ ہوں تو $g(ff(x))$ اور $f(g(x))$ معلوم کریں۔	04
OR	Two pipes can fill a tank separately in 8 hours and 12 hours. Form a rational equation to determine the time taken to fill the tank together. دو پائپ ایک ٹینک کو علیحدہ علیحدہ بالترتیب 8 گھنٹوں اور 12 گھنٹوں میں بھرتے ہیں۔ ایک ناظم مساوات بنائیں جو دونوں پائپوں سے اکٹھے ٹینک بھرنے کا وقت بتائے۔	04
OR	Draw graph of a cubic function $y = x^3$ for $-2 \leq x \leq 2$. مکعب تقاطع $y = x^3$ کا $-2 \leq x \leq 2$ تک گراف بنائیں۔	04
OR	A point $A(4, -3)$ is translated to a point $B(9, 1)$. a. Find the translation vector that maps A to B . b. Using the same vector, determine the image of point $C(-2, 5)$ نقطہ $A(4, -3)$ نقطہ $B(9, 1)$ تک ٹرانسلیٹ ہو رہا ہے۔ الف۔ A سے B ٹرانسلیشن کا ویکٹر معلوم کریں۔ ب۔ ویکٹر کو استعمال کرتے ہوئے نقطہ $C(-2, 5)$ کی امیج معلوم کریں۔	04
OR	Solve:	حل کریں:
OR	$\frac{1}{x+2} + \frac{1}{x-2} = 1; x \in R$	04

Q.3	A rectangular painting has length 5cm more than its width. A wooden frame of uniform width 3cm is fixed around it. If total area of the framed picture is 234cm^2 , find the dimensions of the painting.	08
	ایک مستطیلی تصویر کی لمبائی اس کی چوڑائی سے 5cm زیادہ ہے۔ اس تصویر پر ایک 3cm	

OR	$\frac{3}{x-1} - \frac{1}{x+1} = 1; x \in R$	04
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			The product of two numbers is 55 and their difference is 6. Find the numbers by forming a quadratic equation.	
- and express the result in the form	04	OR	دو اعداد کا حاصل ضرب 55 اور ان کا فرق 6 ہے۔ ایک دو درجی مساوات بنا کر اعداد معلوم	04

Q.4	A farmer wants to fence a rectangular field having perimeter 120 m and area 800m^2 . Using quadratic equations, find the dimensions of the field.
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		Find the dimensions of rectangle, whose perimeter is 80cm and its area is 375cm^2 .
04	OR	ایک مستطیل کے اضلاع معلوم کیجیے۔ جس کا احاطہ 80 سم اور اس کا رقبہ 375cm^2 مربع سم ہے۔

Q.3	The area of rectangular table is 75cm^2 . Suppose the length of table is 5cm more than twice its width. Then what will be its length and width?	08
	مستطیل	

Q.2 Attempt **ALL** parts. Each part carries **(04)** marks.

- i. Solve the equation $3x^2 + 4x - 5 = 5x^2 + 2x + 1$.

OR
Solve the equation $\frac{x-1}{x+3} + \frac{x+3}{x-1} = \frac{13}{6}$
Show that the equation $x^2 + (m+1)x + m = 0$