Quadratic Equation Questions For IBPS Clerk PDF

Instructions

In each of these question two equations I & II with variables a & b are given You have to solve both the equations to find the values of a & b

Mark answer if

a) a

<b

b) $a \leq b$

c) relationship between a & b cannot be established

d) a>b

e) $a \geq b$

Question 1

I.$2a^2 + a - 1 = 0$
II.$12b^2 - 17b + 6 = 0$

A $a < b$

B $a \leq b$

C   Relationship between a & b cannot be established

D $a > b$

E $a \geq b$

   Answer: A

Explanation:
$2a^2 + a - 1 = 0$
We get the factor as:
a=-1, a=0.5

$12b^2 - 17b + 6 = 0$
Solving, we get the factor as,
b= 1.5, b= .75

Hence, b>a
Option A is correct option.

Question 2

I.$a^2 - 5a + 6 = 0$
II. $2b^2 - 13b + 21 = 0$

A $a < b$

B $a \leq b$

C   Relationship between a & b cannot be established

D $a > b$

E $a \geq b$

   Answer: B

Explanation:
Soving the quadratic equations we get,
$a^2 - 5a + 6 = 0$
i.e (a-2)(a-3)=0

i.e a=2, a=3

$2b^2 - 13b + 21 = 0$
i.e (b-3.5)(b-3)=0
i.e b= 3.5 and b=3

Hence, we can deduce that $a \leq b$
Therefore, option B is correct.

Question 3

I.$a^2 + 5a + 6 = 0$
II.$b^2 + 7b + 12 = 0$

A $a < b$

B $a \leq b$

C   Relationship between a & b cannot be established

D $a > b$

E $a \geq b$

  Answer: E

Explanation:
$a^2 + 5a + 6 = 0$
i.e (a+2)(a+3)=0
i.e a=-2, a=-3

.$b^2 + 7b + 12 = 0$
i.e (b+4)(b+3)=0
i.e b=-4, b=-3

Hence, we can deduce that $a \geq b$.
Therefore, option E is correct.

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Question 4

I.$16a^2 = 1$
II.$3b^2 + 7b + 2 = 0$

A $a < b$

B $a \leq b$

C   Relationship between a & b cannot be established

D $a > b$

E $a \geq b$

  Answer: D

Explanation:
$16a^2 = 1$
Solving we get, a=-.25, a=+.25

$3b^2 + 7b + 2 = 0$
Solving we get, b= -2, b = -1/3

Hence, a>b. Option D is correct.

Question 5

I.$a^2 + 2a + 1 = 0$
II.$b^2 = \pm 4$

A $a < b$

B $a \leq b$

C   Relationship between a & b cannot be established

D $a > b$

E $a \geq b$

   Answer: C

Explanation:
We can easily solve equation I to get a = -1
But we cannot solve $b^2 = \pm 4$. Square root of negative number is not a real number.
Hence, we cannot find a value of b. Therefore, we cannot establish a relationship between a and b.

Instructions

In each of the following question two equations are given you have to solve them and
Give answer (a)if pGive answer (b)if p>q
Give answer (c)if $p \leq$q
Give answer(d)if $p \geq$q
Give answer (e)if p=q

Question 6

I.$p^2 - 7p = -12$
II.$q^2 - 3q + 2 = 0$

A   if p<q""

B   if p>q

C   if $p \leq$q

D   if $p \geq$q

E   if p=q

   Answer: B

Explanation:
$p^2 - 7p + 12 = 0$
$(p - 3)(p - 4) = 0$
$p = 3, 4$

$q^2 - 3q + 2 = 0$
$(q - 1)(q - 2) = 0$
$q = 1, 2$

$\therefore p > q$

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Question 7

I. $12p^2 - 7p = -1$
II. $6q^2 - 7q + 2 = 0$

A   if $p < q$""

B   if $p > q$

C   if $p \leq q$

D   if $p \geq q$

E   if $p = q$

Answer: A

Explanation:
$12p^2 - 7p + 1 = 0$
$(4p - 1)(3p - 1) = 0$
$p = \frac{1}{3}, \frac{1}{4}$

$6q^2 - 7q + 2 = 0$
$(2q - 1)(3q - 2) = 0$
$q = \frac{1}{2}, \frac{2}{3}$

$\therefore p < q$

Question 8

I. $p^2 + 12p + 35 = 0$
II. $2q^2 + 22q + 56 = 0$

A   if p < q""

B   if p>q

C   if $p \leq q$

D   if $p \geq q$

E   if p=q or no relationship can be established

Answer: E

Explanation:
$p^2 + 12p + 35 = 0$
$(p + 5)(p + 7) = 0$
$p = -5, -7$

$2q^2 + 22q + 56 = 0$
$q^2 + 11q + 28 = 0$
$(q + 4)(q + 7) = 0$
$q = -4, -7$

As we can see p can be greater than, less than or equal to q. No relationship can be established between p and q and hence, option E is the right answer.

Question 9

I. $p^2 - 8p + 15 = 0$
II. $q^2 - 5q = -6$

A if p < q""

B if p>q

C if $p \leq q$

D if $p \geq q$

E if p=q

Answer: D

Explanation:
$p^2 - 8p + 15 = 0$
$(p - 3)(p - 5) = 0$
$p = 3, 5$

$q^2 - 5q + 6 = 0$
$(q - 2)(q - 3) = 0$
$q = 2, 3$

$p \geq q$

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Question 10

I.$2p^2 + 20p + 50 = 0$
II.$q^2 = 25$

A if p<q ""

B if p>q

C if $p \leq q$

D if $p \geq q$

E if p = q

Answer: C

Explanation:
$2p^2 + 20p + 50 = 0$
$p^2 + 10p + 25 = 0$
$(p + 5)^2 = 0$
$p = -5$

$q^2 = 25$
$q = 5, -5$

$p \leq q$

Instructions

For the two given equations I and II----

Question 11

I. $6p^2 + 5p + 1 = 0$
II. $20q^2 + 9q = -1$

A Give answer (A) if p is greater than q.

B   Give answer (B) if p is smaller than q.

C   Give answer (C) if p is equal to q.

D   Give answer (D) if p is either equal to or greater than q.

E   Give answer (E) if p is either equal to or smaller than q.

Answer: B

Explanation:

$6p^2 + 5p + 1 = 0$
$(2p + 1)(3p + 1) = 0$
$p = -\frac{1}{2}, -\frac{1}{3}$

$20q^2 + 9q + 1 = 0$
$(4q + 1)(5q + 1) = 0$
$q = -\frac{1}{4}, -\frac{1}{5}$

$p < q$

Question 12

I. $3p^2 + 2p - 1 = 0$ **II.** $2q^2 + 7q + 6 = 0$

A   Give answer (A) if p is greater than q.

B   Give answer (B) if p is smaller than q.

C   Give answer (C) if p is equal to q.

D   Give answer (D) if p is either equal to or greater than q.

E   Give answer (E) if p is either equal to or smaller than q.

Answer: A

Explanation:

$3p^2 + 2p - 1 = 0$
$(3p - 1)(p + 1) = 0$
$p = -1, \frac{1}{3}$

$2q^2 + 7q + 6 = 0$
$(2q + 3)(q + 2) = 0$
$q = -2, -\frac{3}{2}$

p > q

Question 13

I. $3p^2 + 15p = -18$ **II.** $q^2 + 7q + 12 = 0$

A   Give answer (A) if p is greater than q.

B   Give answer (B) if p is smaller than q.

C   Give answer (C) if p is equal to q.

D   Give answer (D) if p is either equal to or greater than q.

E Give answer (E) if p is either equal to or smaller than q.

Answer: D

Explanation:
$3p^2 + 15p + 18 = 0$
$p^2 + 5p + 6 = 0$
$(p + 2)(p + 3) = 0$
$p = -3, -2$

$q^2 + 7q + 12 = 0$
$(q + 4)(q + 3) = 0$
$q = -4, -3$

$p \geq q$

Question 14

I. $p = \frac{\sqrt{4}}{\sqrt{9}}$ **II.** $9q^2 - 12q + 4 = 0$

A Give answer (A) if p is greater than q.

B Give answer (B) if p is smaller than q.

C Give answer (C) if p is equal to q.

D Give answer (D) if p is either equal to or greater than q.

E Give answer (E) if p is either equal to or smaller than q.

Answer: C

Explanation:
$p = \frac{\sqrt{4}}{\sqrt{9}}$
$p = \frac{2}{3}$

$9q^2 - 12q + 4 = 0$
$(3q - 2)^2 = 0$
$q = \frac{2}{3}$

p = q

Question 15

I. $p^2 + 13p + 42 = 0$ **II.** $q^2 = 36$

A Give answer (A) if p is greater than q.

B Give answer (B) if p is smaller than q.

C Give answer (C) if p is equal to q.

D Give answer (D) if p is either equal to or greater than q.

E Give answer (E) if p is either equal to or smaller than q.

Answer: E

Explanation:
$p^2 + 13p + 42 = 0$
$(p + 6)(p + 7) = 0$
$p = -6, -7$

$q^2 = 36$
$q = -6, 6$
$p \leq q$

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Instructions

In these questions, two equations numbered I and II are given. You have to solve both the equations and select the appropriate option.

Question 16

I. $2x^2 + 19x + 45 = 0$
II. $2y^2 + 11y + 12 = 0$

A   x = y

B   x> y

C   x < y

D   relationship between xand y cannot be determined

E   x + y

   Answer: C

Explanation:
$2x^2 + 19x + 45 = 0$
$(2x + 9)(x + 5) = 0$
$x = -5, -\frac{9}{2}$

$2y^2 + 11y + 12 = 0$
$(2y + 3)(y + 4) = 0$
$y = -4, -\frac{3}{2}$

x < y

Question 17

I. $3x^2 - 13x + 12 = 0$
II. $2y^2 - 15y + 28 = 0$

A   x> y

B   x= y

C   x < y

D   relationship between x and y cannot be determined
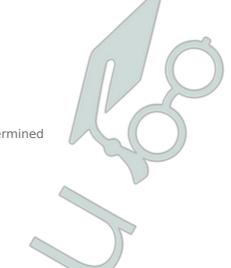
E   x≤ y

   Answer: C

Explanation:
$3x^2 - 13x + 12 = 0$
$(3x - 4)(x - 3) = 0$
$x = \frac{4}{3}, 3$

$2y^2 - 15y + 28 = 0$

$(2y - 7)(y - 4) = 0$
$y = \frac{7}{2}, 4$

x < y

Question 18

I. $x^2 = 16$
II. $2y^2 - 17y + 36 = 0$

A   x > y

B   x > y

C   x < y

D   relationship between x and y cannot be determined

E $x \le y$

   Answer: E

Explanation:
$x^2 = 16$
$x = 4, -4$

$2y^2 - 17y + 36 = 0$
$(2y - 9)(y - 4) = 0$
$y = \frac{9}{2}, 4$

$x \le y$

Question 19

I. $6x^2 + 19x + 15 = 0$
II. $3y^2 + 11y + 10 = 0$

A   x = y

B   x > y

C   x < y

D $x \ge y$

E $x \le y$

   Answer: D

Explanation:
$6x^2 + 19x + 15 = 0$
$(3x + 5)(2x + 3) = 0$
$x = -\frac{5}{3}, -\frac{3}{2}$

$3y^2 + 11y + 10 = 0$
$(3y + 5)(y + 2) = 0$
$y = -\frac{5}{3}, -2$

$x \ge y$

Question 20

I. $2x^2 - 11x + 15 = 0$
II. $2y^2 - 11y + 14 = 0$

A x > y

B x> y

C x < y

D relationship between x and y cannot be determined

E x ≤ y

   Answer: D

Explanation:
$2x^2 - 11x + 15 = 0$
$(2x - 5)(x - 3) = 0$
$x = 3, \frac{5}{2}$

$2y^2 - 11y + 14 = 0$
$(2y - 7)(y - 2) = 0$
$y = 2, \frac{7}{2}$

relationship between x and y cannot be established

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