

## Unit 11 - Week 9

Course outline
How does an NPTEL online course work?
Week 0
Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
Week 9
<input type="radio"/> Lecture 42 : Reduced forms up to equivalence - I
<input checked="" type="radio"/> Lecture 43 : Reduced forms up to equivalence - II
<input type="radio"/> Lecture 44 : Reduced forms up to equivalence - III
<input checked="" type="radio"/> Lecture 45 : Sums of squares - I
<input type="radio"/> Lecture 46 : Sums of squares - II
<input checked="" type="radio"/> Lecture 47 : Sums of squares - III
<input checked="" type="radio"/> Quiz : Assignment 9
<input type="radio"/> Assignment-9 Detailed Solutions
<input type="radio"/> Weekly Feedback
<input type="radio"/> Download Videos
Week 10
Week 11
Week 12
Live Session

## Assignment 9

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2020-11-18, 23:59 IST.**

Please note that multiple options may be correct.

1) Find three smallest non-zero values represented by the form  $x^2 - 3xy + 6y^2$ . 1 point

- (1, 4, 5),  
 (1, 4, 6),  
 (1, 4, 7),  
 (1, 4, 8),  
 (1, 4, 9),  
 (1, 4, 10).

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
(1, 4, 6),

2) Find three smallest non-zero values represented by the form  $5x^2 - 11xy + 7y^2$ . 1 point

- (1, 5, 6),  
 (1, 5, 7),  
 (1, 5, 8),  
 (1, 5, 9),  
 (1, 5, 10),  
 (1, 5, 11).

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
(1, 5, 7),

3) Find three largest non-zero values represented by the form  $-x^2 + 7xy - 15y^2$ . 1 point

- (-1, -3, -4),  
 (-1, -3, -5),  
 (-1, -3, -6),  
 (-1, -3, -7),  
 (-1, -3, -8),  
 (-1, -3, -9).

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
(-1, -3, -4),

4) Find three largest non-zero values represented by the form  $-11x^2 - 9xy - 2y^2$ . 1 point

- (-1, -2, -3),  
 (-1, -2, -4),  
 (-1, -2, -5),  
 (-1, -2, -6),  
 (-1, -2, -7),  
 (-1, -2, -8).

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
(-1, -2, -4),

5) What is the number of distinct reduced forms of discriminant  $-15$ ? 1 point

- 0,  
 1,  
 2,  
 3,  
 4,  
 5.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
2,

6) What is the number of distinct reduced forms of discriminant  $-35$ ? 1 point

- 0,  
 1,  
 2,  
 3,  
 4,  
 5.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
2,

7) Find the number of ordered pairs  $(a, b) \in \mathbb{N} \times \mathbb{N}$  such that  $a^2 + b^2 = 180$ . 1 point

- 0,  
 1,  
 2,  
 3,  
 4,  
 5.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
2,

8) Find the number of ordered pairs  $(a, b) \in \mathbb{N} \times \mathbb{N}$  such that  $a^2 + b^2 = 130$ . 1 point

- 0,  
 1,  
 2,  
 3,  
 4,  
 5.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
4,

9) Which of the following numbers are of the form  $a^2 + b^2 + c^2$  for  $a, b, c \in \mathbb{Z}$ ? 1 point

- 720,  
 730,  
 740,  
 750,  
 760,  
 770.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
720,  
730,  
740,  
750,  
760,  
770.

10) Which of the following numbers are not of the form  $a^2 + b^2 + c^2$  for  $a, b, c \in \mathbb{Z}$ ? 1 point

- 1001,  
 1111,  
 1221,  
 1331,  
 1441,  
 1551.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
1111,  
1551.