

## Unit 12 - Week 10

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## Assignment 10

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

**Due on 2020-11-26, 23:59 IST.**

Please note that multiple options may be correct.

1) Which of these mathematicians contributed to solving cases of Waring's problem? 1 point

- Bhaskaracharya,  
 Acharya Hemchandra,  
 Madhavacharya,  
 R. Balasubramanian,  
 S. S. Pillai,  
 Manjul Bhargava.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
R. Balasubramanian,  
S. S. Pillai,

2) Which of these forms are universal? 1 point

- $x^2 + y^2 + z^2 + 2w^2$ ,  
  
 $x^2 + y^2 + 2z^2 + 3w^2$ ,  
  
 $x^2 + 2y^2 + 3z^2 + 4w^2$ ,  
  
 $x^2 + 2y^2 + 2z^2 + 5w^2$ ,  
  
 $x^2 + 3y^2 + 5z^2 + 7w^2$ ,  
  
 $x^2 + 3y^2 + 3z^2 + 5w^2$ .

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 $x^2 + y^2 + z^2 + 2w^2$ ,  
 $x^2 + y^2 + 2z^2 + 3w^2$ ,  
 $x^2 + 2y^2 + 3z^2 + 4w^2$ ,  
 $x^2 + 2y^2 + 2z^2 + 5w^2$ ,

3) Which of these integers are not represented by  $x^2 + 3y^2 + 3z^2 + 7w^2$ ? 1 point

- 2,  
 3,  
 5,  
 7,  
 11,  
 13,  
 none of the above.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
2,  
5,

4) Which of these integers are not represented by  $x^2 + 2y^2 + 2z^2 + 7w^2$ ? 1 point

- 4,  
 6,  
 10,  
 14,  
 22,  
 26,  
 none of the above.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
none of the above.

5) Which of these continued fractions represent  $\frac{115}{71}$ ? 1 point

- [1; 1, 1, 1, 1, 1, 2, 3],  
 [1; 1, 1, 1, 1, 1, 2, 2, 1],  
 [1; 1, 1, 1, 1, 1, 2, 4],  
 [1; 1, 1, 1, 1, 1, 2, 3, 1],  
 [1; 1, 1, 1, 1, 1, 2, 5],  
 [1; 1, 1, 1, 1, 1, 2, 4, 1].

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
[1; 1, 1, 1, 1, 1, 2, 3],  
[1; 1, 1, 1, 1, 1, 2, 2, 1].

6) Which of these continued fractions represent  $\frac{92}{149}$ ? 1 point

- [1; 1, 1, 1, 1, 1, 2, 3, 1],  
 [0; 2, 1, 1, 1, 1, 2, 4],  
 [2; 1, 1, 1, 1, 1, 2, 2, 1],  
 [0; 3, 1, 1, 1, 1, 2, 4],  
 [0; 1, 1, 1, 1, 1, 2, 3, 1],  
 [0; 1, 1, 1, 1, 1, 2, 4].

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
[0; 1, 1, 1, 1, 1, 2, 3, 1],  
[0; 1, 1, 1, 1, 1, 2, 4].

7) Which of these rational numbers equal the continued fraction [1; 2, 3, 4, 5, 6]? 1 point

- $\frac{225}{157}$ ,  
  
 $\frac{1168}{815}$ ,  
  
 $\frac{1393}{972}$ ,  
  
 $\frac{953}{665}$ ,  
  
 $\frac{1220}{843}$ ,  
  
 $\frac{1974}{1597}$ .

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 $\frac{1393}{972}$ ,

8) Which of these rational numbers equal the continued fraction [2; 3, 5, 7, 11]? 1 point

- $\frac{2161}{880}$ ,  
  
 $\frac{991}{412}$ ,  
  
 $\frac{2941}{1192}$ ,  
  
 $\frac{2963}{1281}$ ,  
  
 $\frac{3229}{1396}$ ,  
  
 $\frac{2341}{1012}$ .

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 $\frac{2963}{1281}$ ,

9) Which of these rational numbers give a good approximation to  $\sqrt{7}$ ? 1 point

- $\frac{37}{14}$ ,  
  
 $\frac{37}{18}$ ,  
  
 $\frac{45}{17}$ ,  
  
 $\frac{45}{23}$ ,  
  
 $\frac{82}{31}$ ,  
  
 $\frac{82}{37}$ .

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
 $\frac{37}{14}$ ,  
 $\frac{45}{17}$ ,  
 $\frac{82}{31}$ ,

10) Which of these rational numbers give a good approximation to  $\sqrt{11}$ ? 1 point

- $\frac{13}{5}$ ,  
  
 $\frac{10}{3}$ ,  
  
 $\frac{19}{3}$ ,  
  
 $\frac{63}{19}$ ,  
  
 $\frac{81}{19}$ ,  
  
 $\frac{199}{60}$ .

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
10,  
 $\frac{3}{1}$ ,  
63,  
 $\frac{19}{3}$ ,  
 $\frac{199}{60}$ ,