Unit 4 - Week 2

Assignment 2

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

Due on 2020-09-30, 23:59 IST.

1) What is the five-digit rounding value of the irrational number π ? *1 point*

- 3.1415
- 3.1416
- 3.14159
- 3.14150

No, the answer is incorrect.
Score: 0
Accepted Answers:
3.1416

2) Which of the following decimal numbers is equivalent to floating-point machine numbers 0 100000000011 1011100100010$\cdots$0 (use the 64-bit long real format) *1 point*

- 27.56640625
- 27.66640625
- 27.76640625
- 27.56650625

No, the answer is incorrect.
Score: 0
Accepted Answers:
27.56640625

3) A computer that represents only 4 significant digits with rounding would calculate $66.666 * 33.333$ as *1 point*

- 2220
- 2221
- 2221.1778
- 2222

No, the answer is incorrect.
Score: 0
Accepted Answers:
2222

4) Suppose p^* approximate p with relative error at most 10^{-3}. What is the largest interval in which p^* must lies for the value of $p = 150$? *1 point*

- $[149.85, 150.15]$
- $[149.65, 150.35]$
- $[149.60, 150.40]$
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
$[149.85, 150.15]$

5) If we perform 3-digit rounding arithmetic on $133 + 0.921$. What is the absolute error with the exact value determined to at least five digits ? *1 point*

- 0.078
- 0.079
- 0.081
- 0.082

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.079

6) What are the value of x and y while solving the following linear system using 4-digit rounding arithmetic *1 point*

$$1.130x - 6.990y = 14.20$$
$$1.013x - 6.099y = 14.22$$

- $x = 2.451, y = -1.635$
- $x = 2.551, y = -1.735$
- $x = 2.651, y = -1.335$
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
None of these

7) What are the root of the following quadratic equation using four-digit rounding arithmetic *1 point*

$$x^2 + 62.10x + 1 = 0$$

- $-0.02000, -62.10$
- $-0.02100, -62.11$
- $-0.02200, -62.13$
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
$-0.02000, -62.10$

8) Use 4-digit rounding arithmetic to evaluate $f(0.1)$ given *1 point*

$$f(x) = \frac{xcosx - sinx}{x - sinx}.$$

What is the relative error for value obtained above using the actual value of $f(0.1) = -1.99899998$?

- 0.029
- 0.031
- 0.030
- None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
None of these

9) What is the truncation error in finding $\int_{-3}^{9} x^3 dx$ using left end point Riemann approximation method with equally portioned points $-3 < 0 < 3 < 6 < 9$? *1 point*

- 648
- 756
- 972
- 1620

No, the answer is incorrect.
Score: 0
Accepted Answers:
972

10) Let *1 point*

$$f(x) = \frac{xcosx - sinx}{x - sinx}.$$

If we evaluate $f(0.1)$ by replacing each trigonometric function with its Taylor polynomial The actual value is $f(0.1) = -1.99899998$. What is the relative error

- 0.00050
- 0.0045
- 0.00060
- 0.0050

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.00050