Assignment 5
The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

[Weeks 5, Lectures: 13,14,15, Topics: Differentiability, Derivative & tangent, Rules of differentiation] f point

In each of the following questions, choose the correct option.

1) If $\sqrt{x} = \sec(2x^2)$, then $2 \cos(2x^2) \tan(2x^2) \, dx =$
   - $x^{30} + 16x^{10} \tan(2x^2)$
   - $-x^{30} + 16x^{10} \tan(2x^2)$
   - $-x^{30} - 16x^{10} \tan(2x^2)$
   - $x^{30} - 16x^{10} \tan(2x^2)$
   - No, the answer is incorrect.
   - Accepted Answers:
     - $-x^{30} + 16x^{10} \tan(2x^2)$

2) Suppose $f(1) = 3, g(1) = 5, f'(1) = 1/2, g'(1) = -4$ and $h(x) = f(x) + g(x)$, Then $12 \cdot h'(1) =$
   - $1$
   - $3$
   - $5$
   - $7$
   - No, the answer is incorrect.
   - Score: 0
   - Accepted Answers: 5

3) If $x^{1/5} + y^{1/3} = 4$, then $y''(8) =$
   - $0$
   - $1/6$
   - $1/3$
   - $1/9$
   - No, the answer is incorrect.
   - Score: 0
   - Accepted Answers: $1/9$

4) The points on the curve $y = (x^2) + 1/\sqrt{(2x - 4)}$ where the slope of the tangent to the curve is $-3/2$, are
   - $(0, 2)$ and $(1/2, 7/12)$
   - $(1/2, 7/12)$ and $(3/2, -1/4)$
   - $(1/2, 7/12)$ and $(-3/2, 1/4)$
   - $(3/2, 9/4)$ and $(3/2, -1/4)$
   - No, the answer is incorrect.
   - Score: 0
   - Accepted Answers: $(0, 2)$ and $(3/2, -1/4)$

5) If the line that passes through points $(0, 3)$ and $(5, -2)$ is tangent to the curve $y = c/(x + 1)$, then $c =$
   - $1$
   - $2$
   - $3$
   - $4$
   - No, the answer is incorrect.
   - Score: 0
   - Accepted Answers: 4

6) Consider determining the slope of the curve $x^2 + y^2 = x + y$ at the points $(1, 1)$ and $(1, -1)$. Which of the following statements holds?
   - Slope at $(1, 1)$ is $-1/2$ and slope at $(1, -1)$ is not defined.
   - Slope at $(1, 1)$ is $1/2$ and slope at $(1, -1)$ is also $1/2$.
   - Slope at $(1, -1)$ is not defined and slope at $(1, -1)$ is also $1/2$.
   - No, the answer is incorrect.
   - Score: 0
   - Accepted Answers: Slope at $(1, 1)$ is $-1/2$ and slope at $(1, -1)$ is not defined.

7) The equation of the tangent to the curve $x = 1 + 1/n^2$, $y = 1 - 2n$ at $r = 2$, is
   - $12x + 4y = 13$
   - $4x - 12y = 13$
   - $12x - 4y = 13$
   - $4x + 12y = 13$
   - No, the answer is incorrect.
   - Score: 0
   - Accepted Answers: $12x + 4y = 13$