

# Calc 2 Self-Assessment Answers

Instructions: Please self-score your work out of 120 using the answers and point values below. We recommend that

- Students who score an 84 or above should use their credit for Calculus II;
- Students who scored below an 84 should plan to retake Calculus II;

To discuss placement further, we encourage you to reach out the Math 122L Calculus II coordinator, Prof. Sarah Schott, at [schott@math.duke.edu](mailto:schott@math.duke.edu).

- (2 points) 2
  - (1 point)  $\frac{4}{9}$
  - (3 points)  $\frac{-2}{\pi}$
  - (4 points) 0
  - (1 points)  $\frac{1}{8}$
  - (5 points)  $\frac{\pi}{4}$
- (2 points)  $\frac{3}{2\sqrt{2}}$
    - (2 points)  $\frac{3}{2}$
    - (2 points)  $11e^2$
    - (2 points)  $12 \ln(2) + 16$
    - (2 points)  $\frac{11}{16}$
  - (2 points) 3
    - (3 points) 26
    - (3 points)  $8 \ln(2)$
- (2 points) 8
    - (3 points) 6
    - (3 points)  $-3$
  - (3 points)  $\frac{5}{4}$
  - (2 points) 0
  - (2 points) 4
- (5 points)  $\ln\left(\frac{5}{4}\right)$
  - (5 points) Diverges

5. (a) (3 points)  $-1$   
(b) (3 points)  $\frac{1}{3}$   
(c) (3 points)  $2 \ln(2)$   
(d) (3 points)  $\sqrt{\pi}e^{\sqrt{\pi}} - \sqrt{\pi}$   
(e) (3 points)  $\boxed{\cos(3) + \sin(2)}$
6. (a) (2 points)  $\frac{5}{6}$   
(b) (2 points)  $\frac{100}{204} - \frac{200}{404}$   
(c) (3 points)  $\frac{1}{2}$   
(d) (3 points)  $0$
7. (a) (3 points)  $4$   
(b) (3 points)  $-3$   
(c) (3 points)  $\ln |2|$   
(d) (3 points)  $\frac{-3}{5}$
8.  $a = 4, b = 3$  (3 points for  $a$ , 3 points for  $b$ )
9. (a) (2 points)  $T_2(x) = 2 + 4(x - 1) + 6(x - 1)^2$   
(b) (2 points)  $y = \frac{-1}{\ln |x| - \frac{1}{2}}$
10. (8 points)
- (a)  $p > 1$ .  
(b)  $0 < p \leq 1$ .  
(c)  $p \leq 0$ .