

Name: _____

Instructor-section: Dwyer

Math 125, Final
December 16, 1998

- The Honor Code is in effect for this examination. All work is to be your own.
- Be sure that you have all 14 pages of the test.
- No calculators are to be used.
- The exam lasts for two hours.
- You are to hand in just the front page.

Good Luck!

Please mark your answers with an **X!** Do NOT circle them!

The dotted lines in the answer box indicate page breaks.

| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|--------|-------|-----|-----|-----|-----|
| 1. | (a) | (b) | (c) | (d) | (e) | 14. | (a) | (b) | (c) | (d) | (e) |
| 2. | (a) | (b) | (c) | (d) | (e) | 15. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 3. | (a) | (b) | (c) | (d) | (e) | 16. | (a) | (b) | (c) | (d) | (e) |
| 4. | (a) | (b) | (c) | (d) | (e) | 17. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 5. | (a) | (b) | (c) | (d) | (e) | 18. | (a) | (b) | (c) | (d) | (e) |
| 6. | (a) | (b) | (c) | (d) | (e) | 19. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 7. | (a) | (b) | (c) | (d) | (e) | 20. | (a) | (b) | (c) | (d) | (e) |
| 8. | (a) | (b) | (c) | (d) | (e) | 21. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 9. | (a) | (b) | (c) | (d) | (e) | 22. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 10. | (a) | (b) | (c) | (d) | (e) | 23. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 11. | (a) | (b) | (c) | (d) | (e) | 24. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 12. | (a) | (b) | (c) | (d) | (e) | 25. | (a) | (b) | (c) | (d) | (e) |
| 13. | (a) | (b) | (c) | (d) | (e) | Score: | _____ | | | | |

Name: _____

Instructor-section: Shaw

Math 125, Final
December 16, 1998

- The Honor Code is in effect for this examination. All work is to be your own.
- Be sure that you have all 14 pages of the test.
- No calculators are to be used.
- The exam lasts for two hours.
- You are to hand in just the front page.

Good Luck!

Please mark your answers with an **X!** Do NOT circle them!

The dotted lines in the answer box indicate page breaks.

| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|--------|-------|-----|-----|-----|-----|
| 1. | (a) | (b) | (c) | (d) | (e) | 14. | (a) | (b) | (c) | (d) | (e) |
| 2. | (a) | (b) | (c) | (d) | (e) | 15. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 3. | (a) | (b) | (c) | (d) | (e) | 16. | (a) | (b) | (c) | (d) | (e) |
| 4. | (a) | (b) | (c) | (d) | (e) | 17. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 5. | (a) | (b) | (c) | (d) | (e) | 18. | (a) | (b) | (c) | (d) | (e) |
| 6. | (a) | (b) | (c) | (d) | (e) | 19. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 7. | (a) | (b) | (c) | (d) | (e) | 20. | (a) | (b) | (c) | (d) | (e) |
| 8. | (a) | (b) | (c) | (d) | (e) | 21. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 9. | (a) | (b) | (c) | (d) | (e) | 22. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 10. | (a) | (b) | (c) | (d) | (e) | 23. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 11. | (a) | (b) | (c) | (d) | (e) | 24. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 12. | (a) | (b) | (c) | (d) | (e) | 25. | (a) | (b) | (c) | (d) | (e) |
| 13. | (a) | (b) | (c) | (d) | (e) | Score: | _____ | | | | |

Name: _____

Instructor-section: Taylor

Math 125, Final
December 16, 1998

- The Honor Code is in effect for this examination. All work is to be your own.
- Be sure that you have all 14 pages of the test.
- No calculators are to be used.
- The exam lasts for two hours.
- You are to hand in just the front page.

Good Luck!

Please mark your answers with an **X!** Do NOT circle them!

The dotted lines in the answer box indicate page breaks.

| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|--------|-------|-----|-----|-----|-----|
| 1. | (a) | (b) | (c) | (d) | (e) | 14. | (a) | (b) | (c) | (d) | (e) |
| 2. | (a) | (b) | (c) | (d) | (e) | 15. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 3. | (a) | (b) | (c) | (d) | (e) | 16. | (a) | (b) | (c) | (d) | (e) |
| 4. | (a) | (b) | (c) | (d) | (e) | 17. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 5. | (a) | (b) | (c) | (d) | (e) | 18. | (a) | (b) | (c) | (d) | (e) |
| 6. | (a) | (b) | (c) | (d) | (e) | 19. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 7. | (a) | (b) | (c) | (d) | (e) | 20. | (a) | (b) | (c) | (d) | (e) |
| 8. | (a) | (b) | (c) | (d) | (e) | 21. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 9. | (a) | (b) | (c) | (d) | (e) | 22. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 10. | (a) | (b) | (c) | (d) | (e) | 23. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 11. | (a) | (b) | (c) | (d) | (e) | 24. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 12. | (a) | (b) | (c) | (d) | (e) | 25. | (a) | (b) | (c) | (d) | (e) |
| 13. | (a) | (b) | (c) | (d) | (e) | Score: | _____ | | | | |

Name: _____

Instructor-section: Nollet

Math 125, Final
December 16, 1998

- The Honor Code is in effect for this examination. All work is to be your own.
- Be sure that you have all 14 pages of the test.
- No calculators are to be used.
- The exam lasts for two hours.
- You are to hand in just the front page.

Good Luck!

Please mark your answers with an **X!** Do NOT circle them!

The dotted lines in the answer box indicate page breaks.

| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|--------|-------|-----|-----|-----|-----|
| 1. | (a) | (b) | (c) | (d) | (e) | 14. | (a) | (b) | (c) | (d) | (e) |
| 2. | (a) | (b) | (c) | (d) | (e) | 15. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 3. | (a) | (b) | (c) | (d) | (e) | 16. | (a) | (b) | (c) | (d) | (e) |
| 4. | (a) | (b) | (c) | (d) | (e) | 17. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 5. | (a) | (b) | (c) | (d) | (e) | 18. | (a) | (b) | (c) | (d) | (e) |
| 6. | (a) | (b) | (c) | (d) | (e) | 19. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 7. | (a) | (b) | (c) | (d) | (e) | 20. | (a) | (b) | (c) | (d) | (e) |
| 8. | (a) | (b) | (c) | (d) | (e) | 21. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 9. | (a) | (b) | (c) | (d) | (e) | 22. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 10. | (a) | (b) | (c) | (d) | (e) | 23. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 11. | (a) | (b) | (c) | (d) | (e) | 24. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 12. | (a) | (b) | (c) | (d) | (e) | 25. | (a) | (b) | (c) | (d) | (e) |
| 13. | (a) | (b) | (c) | (d) | (e) | Score: | _____ | | | | |

Name: _____

Instructor-section: Budhiraja

Math 125, Final

December 16, 1998

- The Honor Code is in effect for this examination. All work is to be your own.
- Be sure that you have all 14 pages of the test.
- No calculators are to be used.
- The exam lasts for two hours.
- You are to hand in just the front page.

Good Luck!

Please mark your answers with an **X!** Do NOT circle them!

The dotted lines in the answer box indicate page breaks.

| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|--------|-------|-----|-----|-----|-----|
| 1. | (a) | (b) | (c) | (d) | (e) | 14. | (a) | (b) | (c) | (d) | (e) |
| 2. | (a) | (b) | (c) | (d) | (e) | 15. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 3. | (a) | (b) | (c) | (d) | (e) | 16. | (a) | (b) | (c) | (d) | (e) |
| 4. | (a) | (b) | (c) | (d) | (e) | 17. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 5. | (a) | (b) | (c) | (d) | (e) | 18. | (a) | (b) | (c) | (d) | (e) |
| 6. | (a) | (b) | (c) | (d) | (e) | 19. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 7. | (a) | (b) | (c) | (d) | (e) | 20. | (a) | (b) | (c) | (d) | (e) |
| 8. | (a) | (b) | (c) | (d) | (e) | 21. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 9. | (a) | (b) | (c) | (d) | (e) | 22. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 10. | (a) | (b) | (c) | (d) | (e) | 23. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 11. | (a) | (b) | (c) | (d) | (e) | 24. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 12. | (a) | (b) | (c) | (d) | (e) | 25. | (a) | (b) | (c) | (d) | (e) |
| 13. | (a) | (b) | (c) | (d) | (e) | Score: | _____ | | | | |

Name: _____

Instructor-section: Gekhtman Section #: _____

Math 125, Final

December 16, 1998

- The Honor Code is in effect for this examination. All work is to be your own.
- Be sure that you have all 14 pages of the test.
- No calculators are to be used.
- The exam lasts for two hours.
- You are to hand in just the front page.

Good Luck!

Please mark your answers with an **X!** Do NOT circle them!

The dotted lines in the answer box indicate page breaks.

| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|--------|-------|-----|-----|-----|-----|
| 1. | (a) | (b) | (c) | (d) | (e) | 14. | (a) | (b) | (c) | (d) | (e) |
| 2. | (a) | (b) | (c) | (d) | (e) | 15. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 3. | (a) | (b) | (c) | (d) | (e) | 16. | (a) | (b) | (c) | (d) | (e) |
| 4. | (a) | (b) | (c) | (d) | (e) | 17. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 5. | (a) | (b) | (c) | (d) | (e) | 18. | (a) | (b) | (c) | (d) | (e) |
| 6. | (a) | (b) | (c) | (d) | (e) | 19. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 7. | (a) | (b) | (c) | (d) | (e) | 20. | (a) | (b) | (c) | (d) | (e) |
| 8. | (a) | (b) | (c) | (d) | (e) | 21. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 9. | (a) | (b) | (c) | (d) | (e) | 22. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 10. | (a) | (b) | (c) | (d) | (e) | 23. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 11. | (a) | (b) | (c) | (d) | (e) | 24. | (a) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 12. | (a) | (b) | (c) | (d) | (e) | 25. | (a) | (b) | (c) | (d) | (e) |
| 13. | (a) | (b) | (c) | (d) | (e) | Score: | _____ | | | | |

1.(6 pts.) Find the unique number a which makes the function

$$f(x) = \begin{cases} \frac{\sin 4x \cos 2x}{x} & -\pi/4 < x \leq \pi/4, x \neq 0 \\ a & x = 0 \end{cases}$$

continuous on the entire interval $[-\pi/4, \pi/4]$.

- (a) $\frac{1}{2}$ (b) $\frac{1}{4}$ (c) 4
(d) 2 (e) There is no such number

2.(6 pts.)

$$\lim_{u \rightarrow \infty} \frac{u^3 + u^{-3}}{u^5 + u^{-5}}$$

- (a) ∞ (b) $-\infty$ (c) $\frac{3}{5}$ (d) $\frac{5}{3}$ (e) 0

3.(6 pts.) Partition the interval from 0 to 2 into n equal parts. In the k -th subinterval, choose the right-hand endpoint. The resulting Riemann sum for the integral $\int_0^2 \sec x \, dx$ is

- (a) $\frac{2}{n} \sum_{k=1}^n \sec\left(\frac{2k}{n}\right)$ (b) $\frac{2}{n} \sum_{k=1}^n \cos\left(\frac{2k}{n}\right)$ (c) $\frac{3}{n} \sum_{k=1}^n \sec\left(\frac{k}{n}\right)$
(d) $\frac{1}{2n} \sum_{k=1}^n \sec\left(\frac{k}{n}\right)$ (e) $\frac{1}{n} \sum_{k=1}^n \cos\left(\frac{n}{k}\right)$

4.(6 pts.) If

$$x^3 + y^3 = 5xy - 3 ,$$

find $\frac{dy}{dx}$ at the point $(1, 1)$.

- (a) Does not exist (b) -3 (c) -4
(d) -1 (e) 0

5.(6 pts.) Suppose f and g are two functions which are differentiable at 5. If $f(5) = 2$, $f'(5) = 1$, $g(5) = 3$ and $g'(5) = 2$,

$$\left(\frac{f}{g}\right)'(5) = ?$$

(a) $\frac{2}{3}$

(b) $\frac{7}{4}$

(c) $-\frac{1}{9}$

(d) 0

(e) $\frac{5}{9}$

6.(6 pts.) Suppose that the two functions in problem 5 are differentiable everywhere. What additional information do you need to compute the derivative of $f(g(x))$ at $x = 5$?

(a) $g'(1)$

(b) $g'(2)$

(c) $f'(3)$

(d) $f(3)$

(e) $f'(2)$

7.(6 pts.)

$$\frac{d(x^5 + 2x + 1)^{45}}{dx} = ?$$

(a) $45(x^5 + 2x + 1)^{44}$

(b) $45(5x^4 + 2)^{44}$

(c) $45x^4 4(5x^4 + 2)$

(d) $225x^{224} + 90x^{44}$

(e) $45(x^5 + 2x + 1)^{44}(5x^4 + 2)$

8.(6 pts.) The absolute maximum of the function $x^3 - 3x^2 + 3x + 5$ on the interval $[0, 2]$ is

(a) 3

(b) 1

(c) 0

(d) 7

(e) 5

9.(6 pts.) Suppose that the diagram below is the graph of the function $f(x)$.

Which graph below best represents the graph of the derivative of $f(x)$.

(a)

(b)

(c)

(d)

(e)

12.(6 pts.) How many solutions in real numbers does the equation $x^3 - 3x^2 - 1 = 0$ have?

- (a) 2 (b) 3 (c) 4 (d) 1 (e) None

13.(6 pts.) The graph $y = 3x^5 - 5x^4$ has one point of inflection. It occurs at $x = ?$.

- (a) -2 (b) 1 (c) 0 (d) -1 (e) 2

14.(6 pts.) Find the derivative of the function $\int_2^{x^2} \frac{t^3 + 1}{t^2 + 1} dt$ with respect to x .

(a) $\frac{9}{5}$ (b) $2x \frac{x^6 + 1}{x^4 + 1}$ (c) 0

(d) $\frac{x^6 + 1}{x^2 + 1}$ (e) $\frac{3x^4 + 1}{2x^2} - \frac{3x^2 + 1}{2x}$

15.(6 pts.) The value of $\int_0^1 \frac{2x + 3}{(x^2 + 3x + 4)^2} dx$ is

(a) $-\frac{1}{4}$ (b) 8 (c) 4 (d) $\frac{1}{4}$ (e) $\frac{1}{8}$

16.(6 pts.) Suppose that the average value of a function $f(x)$ on the interval $[0, 2]$ is 4. Suppose further that $f'(x) > 0$ on the same interval. Which of the following statements *must* be true?

- (a) $f(0) > 4$ (b) $f(0) = 4$ (c) $f(2) = 4$ (d) $f(2) > 4$ (e) $f(2) < 4$

17.(6 pts.) Find the area between the two curves $y = x^2$ and $y = 5x - 4$.

- (a) $\int_1^4 x^2 - 5x - 4 \, dx$ (b) $\int_0^4 5x - 4 + x^2 \, dx$ (c) $\int_0^1 5x - 4 - x^2 \, dx$
(d) $\int_0^1 x^2 - 5x + 4 \, dx$ (e) $\int_1^4 5x - 4 - x^2 \, dx$

18.(6 pts.) $\int_0^{\pi/4} \sec \theta \tan \theta d\theta = ?$

- (a) $\frac{\sqrt{2}}{2} - 1$ (b) $\frac{\sqrt{2}}{2}$ (c) $\sqrt{2} - 1$ (d) 1 (e) $\sqrt{2}$

19.(6 pts.) Solve the initial value problem

$$\frac{dy}{dx} = \frac{1}{x+2}, \quad y(1) = 2 .$$

- (a) $\int_0^x \frac{dt}{t+2}$ (b) $\int_1^x \frac{dt}{t+2}$ (c) $\int_2^x \frac{dt}{t+2} + 2$
(d) $\int_1^x \frac{dt}{t+2} + 2$ (e) $\int_2^x \frac{dt}{t+2} + 1$

20.(6 pts.) Consider the region between $y = x + 1$ and $y = -x^2 + 5x - 2$. Find the volume obtained by rotating this region about the x -axis.

(a) $2\pi \int_1^3 ((x + 1) - (-x^2 + 5x - 2)) dx$ (b) $\int_1^3 ((x + 1)^2 - (-x^2 + 5x - 2)) dx$

(c) $\pi \int_1^3 ((-x^2 + 5x - 2)^2 - (x + 1)^2) dx$ (d) $2\pi \int_1^3 ((-x^2 + 5x - 2) - (x + 1)) dx$

(e) $\pi \int_1^3 ((x + 1)^2 - (-x^2 + 5x - 2)^2) dx$

21.(6 pts.) Find the volume obtained by rotating the region in problem 20 about the y -axis.

(a) $2\pi \int_1^3 x((-x^2 + 5x - 2) - (x + 1)) dx$ (b) $\pi \int_1^3 x((-x^2 + 5x - 2)^2 - (x + 1)^2) dx$

(c) $\pi \int_1^3 ((x + 1)^2 - (-x^2 + 5x - 2)^2) dx$ (d) $2\pi \int_1^3 ((x + 1) - (-x^2 + 5x - 2)) dx$

(e) $\int_1^3 ((x + 1)^2 - (-x^2 + 5x - 2)) dx$

22.(6 pts.) Find the length of the curve $y = x^3 + 1$ between $x = 0$ and $x = 3$.

(a) $\int_0^3 \sqrt{1 + \frac{x^4}{4}} dx$ (b) $\int_0^3 \sqrt{1 + 9x^4} dx$ (c) $\int_0^3 \sqrt{1 + x^3} dx$

(d) $\int_0^3 \sqrt{1 + x^6} dx$ (e) $\int_0^3 \sqrt{1 + 3x^2} dx$

23.(6 pts.) Find the surface area of the surface of revolution obtained by revolving the curve $y = \sin x$ from $x = 0$ to $x = \pi$ around the x -axis.

(a) $2\pi \int_0^\pi \sin x \sqrt{1 + \cos^2 x} dx$ (b) $\pi \int_0^\pi \sqrt{1 + \cos^2 x} dx$

(c) $2\pi \int_0^\pi x \sqrt{1 + \sin^2 x} dx$ (d) $2\pi \int_0^\pi \sin x \sqrt{1 + \sin^2 x} dx$

(e) $2\pi \int_0^\pi (x - \sin x) \sqrt{1 + \cos^2 x} dx$

24.(6 pts.) Find the moment about the origin of a rod which runs from $x = 1$ to $x = 4$ and for which the density is given by $\delta(x) = \frac{1}{x^2}$.

- (a) $\int_1^4 \frac{1}{x^2} dx \int_1^4 \frac{1}{x} dx$ (b) $\int_1^4 \frac{1}{x} dx$ (c) $\int_1^4 \frac{1}{x^2} dx$
- (d) $\frac{\int_1^4 \frac{1}{x^2} dx}{\int_1^4 \frac{1}{x} dx}$ (e) $\int_1^4 \frac{1}{x^4} dx$

25.(6 pts.) Find the center of mass of the thin plate of constant density 1 in the first quadrant below the line $x + y = 2$.

- (a) $(\frac{2}{3}, \frac{2}{3})$ (b) $(1, 1)$ (c) $(-\frac{3}{2}, -\frac{3}{2})$ (d) $(\frac{1}{2}, \frac{1}{2})$ (e) $(\frac{1}{3}, \frac{1}{3})$

Name: _____

Bullwinkle

Instructor-section: Bullwinkle

Math 125, Final

December 16, 1998

- The Honor Code is in effect for this examination. All work is to be your own.
- Be sure that you have all 14 pages of the test.
- No calculators are to be used.
- The exam lasts for two hours.
- You are to hand in just the front page.

Good Luck!

Please mark your answers with an **X**! Do NOT circle them!

The dotted lines in the answer box indicate page breaks.

| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|--------|-------|-----|-----|-----|-----|
| 1. | (a) | (b) | (●) | (d) | (e) | 14. | (a) | (●) | (c) | (d) | (e) |
| 2. | (a) | (b) | (c) | (d) | (●) | 15. | (a) | (b) | (c) | (d) | (●) |
| | | | | | | | | | | | |
| 3. | (●) | (b) | (c) | (d) | (e) | 16. | (a) | (b) | (c) | (●) | (e) |
| 4. | (a) | (b) | (c) | (●) | (e) | 17. | (a) | (b) | (c) | (d) | (●) |
| | | | | | | | | | | | |
| 5. | (a) | (b) | (●) | (d) | (e) | 18. | (a) | (b) | (●) | (d) | (e) |
| 6. | (a) | (b) | (●) | (d) | (e) | 19. | (a) | (b) | (c) | (●) | (e) |
| | | | | | | | | | | | |
| 7. | (a) | (b) | (c) | (d) | (●) | 20. | (a) | (b) | (●) | (d) | (e) |
| 8. | (a) | (b) | (c) | (●) | (e) | 21. | (●) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 9. | (a) | (●) | (c) | (d) | (e) | 22. | (a) | (●) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 10. | (a) | (b) | (●) | (d) | (e) | 23. | (●) | (b) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 11. | (a) | (●) | (c) | (d) | (e) | 24. | (a) | (●) | (c) | (d) | (e) |
| | | | | | | | | | | | |
| 12. | (a) | (b) | (c) | (●) | (e) | 25. | (●) | (b) | (c) | (d) | (e) |
| 13. | (a) | (●) | (c) | (d) | (e) | Score: | _____ | | | | |