**MAC1105**
**Exam 2A**
**Fall 2015**

A. Sign your bubble sheet on the back at the bottom in ink.

B. In pencil, write and encode in the spaces indicated:

1) Name (last name, first initial, middle initial)
2) UF ID number
3) Section number

C. Under "special codes" code in the test ID numbers 2, 1.

1 ● 3 4 5 6 7 8 9 0
● 2 3 4 5 6 7 8 9 0

D. At the top right of your answer sheet, for "Test Form Code", encode A.

● B C D E

E. 1) This exam consists of 10 multiple choice questions, each worth 4 points, plus one page (front and back) of 2 free response questions worth 10 points total. The total number of questions on this exam is 13. The test is counted out of 50 points. You may write on the exam.

2) The time allowed is 90 minutes.
3) NO CALCULATORS OR OTHER AIDS ARE PERMITTED.
4) Raise your hand if you need more scratch paper or if you have a problem with your exam. DO NOT LEAVE YOUR SEAT UNLESS YOU ARE FINISHED WITH THE EXAM.

**F. KEEP YOUR BUBBLE SHEET COVERED AT ALL TIMES.**

G. When you are finished:

1) Before turning in your exam **check carefully for transcribing errors**. Any mistakes you leave in are there to stay. If you encode the information from parts B-D incorrectly, you will lose 2 points from your total exam score.
2) You must turn in your bubble sheet and free response sheet to your discussion leader or exam proctor. Be prepared to show your picture I.D. with a legible signature.
3) The answers will be posted in Canvas within one day after the exam. Your discussion leader will return your free response sheet with your score in discussion. Your score will also be posted in canvas within one week of the exam.

**MAC 1105 Exam 2A, Part I Multiple Choice**

**NOTE:** Be sure to bubble the answers to questions 1–10 on your bubble sheet.

**1.** Solve the equation: $\sqrt{x+7}+5=x$

a. $\{2\}$ b. $\{9,18\}$ c. $\{9\}$ d. $\{2,9\}$ c. No solution

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**2.** Solve $x^2-12x>-35$. Write the solution in interval notation.

a. No solution b. $(5,7)$ c. $(-\infty,5)\cup(7,\infty)$ d. $(7,\infty)$
e. $(-\infty,5)$

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**3.** Write an equation for the line that passes through the point $(1,8)$ and is perpendicular to the line $y=3$.

a. $y=1$ b. Not possible c. $x=1$ d. $x=8$
e. $y=8$

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**4.** Find the **sum** of the solution(s): $\dfrac{-4x}{x-1}+\dfrac{4}{x+1}=\dfrac{-8}{x^2-1}$

a. 2 b. No solution c. 0 d. 1 e. $-1$

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**5.** Decide if $-2g(x)-3$ is even, odd, or neither given that $g(x)$ is odd.

a. Not enough information b. Neither c. Even d. Odd

**For questions 6, 7, and 8 consider the relation:** $x = y^2$

**6.** What is the domain and range of the relation?

a. Domain: $(-\infty, \infty)$, Range:$(-\infty, \infty)$
b. Domain: $(0, \infty)$, Range:$[0, \infty)$
c. Domain: $[0, \infty)$, Range:$[0, \infty)$
d. Domain: $(0, \infty)$, Range:$(0, \infty)$
e. Domain: $[0, \infty)$, Range:$(-\infty, \infty)$

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**7.** Find the x- and y-intercept(s) if possible.

a. x-intercept: 0, y-intercept: 0
b. x-intercept: none, y-intercept: 0
c. x-intercept: 0, y-intercept: none
d. x-intercept: none, y-intercept: none

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**8.** Is the relation a continuous function? Why or why not?

a. No because the relation is neither continuous nor a function.
b. Yes because the relation is both a function and continuous.
c. No because it is not continuous.
d. No because it is not a function.
e. Yes because it is a function and all functions are continuous.

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**9.** Discribe the transformations, **in sequential order**, the graph of $f(x)$ would undergo to become $-f(x+2) - 3$ given $f(x) = |x|$.

a. reflect over x-axis, shift right 2 units, shift down 3 units
b. shift left 2 units, reflect over y-axis, shift down 3 units
c. shift left 2 units, reflect over x-axis, shift down 3 units
d. shift right 2 units, reflect over y-axis, shift down 3 units
e. Not enough information

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**10.** Solve: $|4x - 7| + 3 < 0$.

a. $(-\infty, -\infty)$
b. $x < \frac{11}{4}$ and $x < 1$
c. No solution
d. $x < 1$ and $x > \frac{5}{2}$

There is no question on this page.

# MAC 1105 Exam 2A, Part II Free Response

Name: _____ UF ID #: _____

Signature: _____ Section #: _____

CLEARLY SHOW ALL WORK TO RECEIVE FULL CREDIT

**1.** (5 points) A person throws a ball straight up in the air with an initial velocity of 5 feet per second. The height, h, in feet of the ball as a function of time, t, in seconds is represented by the equation: $h(t) = -t^2 + 5t + 6$. Use $h(t)$ to answer the following questions. **Be sure to include units in your answers.**

a) What is the initial height of the ball? Answer: _____

b) When does the ball reach its maximum height? Answer: _____

c) What is the maximum height of the ball? Answer: _____

d) How long does it take the ball to hit the ground?

Answer: _____

**2.** (5 points) Consider the line segment with endpoints $(-3, -8)$ and $(-3, 0)$.

a) Find the midpoint of the line segment.Write answer as an ordered pair.

Answer: _____

b) Find the length of the line segment.

Answer: _____

c) Write the equation for the circle with the line segment as its diameter. Write equation in center-radius form.

Answer: _____

d) Sketch the graph of the circle. Be sure to **label** the center point and at least one point on the circle.