

TMATYC - Developmental Algebra Test – 2011

Instructions for the Answer Sheet

DO NOT BEGIN UNTIL YOU ARE TOLD TO DO SO

To the student:

Complete **all** information on answer sheet. Carefully answer the eligibility questions. You will be disqualified if you take an incorrect test. If you are unsure of your eligibility status, ask your test monitor **NOW**, before starting the test. No questions may be asked once the test begins.

You have one hour to take this test. You are allowed to use a non-symbolic calculator (such as the TI-83, TI-84, or TI-86). Calculators that perform symbolic manipulations are **not** allowed (these include the TI-89, TI-92, or TI-Nspire). Blank scratch paper is allowed. No books, notes, or any other electronic devices are allowed. Please refrain from using any cell phone during the test. Such devices should be muted or put on silent mode.

There are 25 questions on the test. Each question is worth 4 points for a correct answer, but 1 point will be subtracted for each incorrect answer. There is no penalty for unanswered questions.

You are not expected to answer every question in the time allowed. If you are having difficulty with a question, skip it and, if time permits, return to it after you finish the others.

Place the letter for your choice of the correct response on the answer sheet under the column entitled "Student's Response". **Write your letters in block capital form (i.e. write as A B C D E).**

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TMATYC - Developmental Algebra Test – 2011 Answer Sheet

Name: _____ School: _____

Address: _____

Current Math Class: _____

Math Teacher: _____

	Student's Response	Scorer
1		
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25		

Email: _____

Phone: _____

Have you received a two-year or higher college degree? Yes No

Have you ever been enrolled in a college-level math class?

Yes No

If yes, which class? _____

For Scorer:

Number Correct = _____

Number Incorrect = _____

Number Blank = _____

Num Correct \times 4 = _____

– Num Incorrect = _____

Score on Test = _____

TMATYC
DEVELOPMENTAL MATHEMATICS TEST
Fall 2011

1. 37 percent of what number is 236.06?

- A. 8734.22 B. 638 C. 6.38 D. 87.3422

2. Multiply $(4x - 7)^2$

- A. $16x^2 + 56x + 49$ B. $16x^2 + 49$ C. $16x^2 - 56x + 49$ D. $16x^2 - 49$

3. Xavier is $\frac{1}{3}$ the age of his grandmother. As they both age, the ratio of the grandmother's age to Xavier's age,

- A. increases B. decreases C. stays the same D. cannot be determined

4. A sale price is being offered for two-topping pizzas. White or wheat crust is offered along with a selection of 5 different toppings. Customers can select two different toppings or one topping twice. How many different pizzas will be offered under this special?

- A. 20 B. 30 C. 40 D. 50

5. Subtract $6x^5 - 5x^3 + 6x$ from $1 - 2x + 3x^3 + 4x^4$

- A. $6x^5 + 4x^4 - 2x^3 + 4x - 1$ B. $-6x^5 + 4x^4 - 2x^3 + 4x + 1$
C. $6x^5 - 4x^4 - 8x^3 + 8x - 1$ D. $-6x^5 + 4x^4 + 8x^3 - 8x + 1$

6. A charity is raffling off a nearly new car. A total of 850 tickets were sold and you purchased 3 for 75 dollars. What is the probability you will not win the car?

- A. $\frac{72}{850}$ B. $\frac{625}{850}$ C. $\frac{847}{850}$ D. $\frac{3}{850}$

7. Simplify. $(2.3 \times 10^2)(8.7 \times 10^{-7})$

A. 2.001×10^{-4}

B. 1.1×10^{-4}

C. 20.24×10^{-5}

D. 11×10^{-5}

8. One side of a rectangle is 7 times the length of the other side. If x is the length of the other side, what is the perimeter (P) and area (A) of the rectangle?

A. $P = 8x^2, A = 14x$

B. $P = 16x, A = 7x^2$

C. $P = 7x^2, A = 16x$

D. $P = 16x, A = 8x^2$

9. Evaluate $3x^2 - 7xy - y^3 + 4x - 2$ for $x = -2$ and $y = -3$.

A. -13

B. 44.8

C. -37

D. -44.8

10. Thirty people were surveyed to find out if they preferred waxed, or unwaxed dental floss. Twelve people preferred unwaxed dental floss. Assuming the ratio remains constant, if 200 people were surveyed, how many would like waxed dental floss?

A. 67

B. 80

C. 133

D. 120

11. Simplify $(3x + 8)(4x^2 + 2x - 7)$

A. $12x^3 + 38x^4 - 5x^2 - 56$

B. $12x^3 + 38x^2 + 37x - 56$

C. $12x^3 + 38x^2 - 5x + 56$

D. $12x^3 + 38x^2 - 5x - 56$

12. Simplify $(4x^2y^3z^0)^3$

A. $64x^5y^6z^3$

B. $64x^6y^6$

C. $64x^6y^9$

D. $64x^5y^9$

13. Solve for x . $A = \frac{x(y+z)}{y}$

A. $x = \frac{A}{z}$

B. $\frac{Ay}{y+z}$

C. $A + \frac{1}{z}$

D. $A - z$

14. $2 \leq -3x + 5 \leq 14$

A. $1 \leq x \leq -3$

B. $-3 \leq x \geq 1$

C. $-3 \leq x \leq 1$

D. $-3 \geq x \geq 1$

15. Find an equation for the following points:

x	y
1	-4
2	0
3	4
5	12

A. $y = 4x$

B. $y = 4x - 4$

C. $y = -4x - 8$

D. $y = 4x - 8$

16. Find the intersection of $2x - y = 16$ and $2x + y = 8$

A. $(4, 0)$

B. $(6, -4)$

C. $(6, -6)$

D. $(4, 0)$

17. Find the slope, x -intercept and y -intercept of $6x - 7y = 42$

A. Slope = $\frac{6}{7}$, x -intercept $(7, 0)$, y -intercept $(0, -6)$

B. Slope = $\frac{-6}{7}$, x -intercept $(7, 0)$, y -intercept $(0, -6)$

C. Slope = $\frac{6}{7}$, x -intercept $(7, 0)$, y -intercept $(0, 6)$

D. Slope = $\frac{-6}{7}$, x -intercept $(7, 0)$, y -intercept $(0, 6)$

18. A produce company has a 100-acre farm on which it grows lettuce and cabbage. Each acre of cabbage requires 600 hours of labor, and each acre of lettuce needs 400 hours of labor. If 45,000 hours are available and if all land and labor resources are to be used, find the number of acres of each crop that should be planted.

- A. 50 acres of cabbage and 50 acres of lettuce B. 25 acres of cabbage and 75 acres of lettuce
 C. 55 acres of lettuce and 45 acres of cabbage D. 45 acres of cabbage and 55 acres of lettuce

19. A baby weighs 10 pounds at birth, and three years later the child's weight is 30 pounds. Assume that childhood weight W (in pounds) is linearly related to age t (in years). Which formula is the best model of the problem?

- A. $W = \frac{3}{20}t - \frac{3}{2}$ B. $W = -\frac{3}{20} + 10$ C. $W = -\frac{20}{3}t - \frac{3}{2}$ D. $W = \frac{20}{3}t + 10$

20. Find an equation of the line through the point (7, -3) that is perpendicular to the line $2x - 5y = 8$.

- A. $-2x + 5y = -14$ B. $5x + 2y = 29$ C. $-5x + 2y = 41$ D. $7x - 3y = 4$

21. Express the following as a simplified polynomial. $\frac{3u^3v^4 - 2u^5v^2 + (u^2v^2)^2}{\frac{u^3v^2}{2}}$

- A. $\frac{3}{2}u^2v - u^2v + \frac{1}{2}u^4v^4$ B. $3v^3 - 4u^2 + uv$
 C. $v^2 - 2u + uv$ D. $6v^2 - 4u^2 + 2uv^2$

22. O'Carroll's formula is used to handicap weight lifters. If a lifter who weighs b kg lifts n kg of weight, then the handicapped weight W is given by $W = \frac{n}{\sqrt[3]{b-35}}$, solve for the lifter's weight b .

- A. $b = \frac{W}{n+35W}$ B. $b = n^3 + \frac{35}{W^3}$ C. $b = \frac{n^3+35W^3}{W^3}$ D. $b = \frac{35W^3-n^3}{W^3}$

23. Simplify the expression. $\left(\frac{-8x^3}{y^{-6}}\right)^{2/3}$

- A. $4x^2y^4$ B. $\frac{-8x^{2/3}}{y^4}$ C. $-2x^3y^{-4}$ D. $\frac{8x^{11/3}}{y^{-4}}$

24. Find the domain of f . $f(x) = \frac{\sqrt{2x-3}}{x^2-5x+4}$

- A. $x \neq 1$ B. $\left[\frac{3}{2}, 4\right) \cup (4, \infty)$ C. $\{x \mid x \neq 1, x \neq 4\}$ D. $x \geq \frac{3}{2}$

25. Solve the inequality. $-5 \leq \frac{4-3x}{2} < 1$

- A. $\left[\frac{1}{3}, \frac{14}{3}\right)$ B. $\frac{1}{3} \geq x \leq \frac{14}{3}$ C. $\left(\frac{2}{3}, \frac{14}{3}\right]$ D. $\frac{3}{14} \leq x < \frac{2}{3}$