Math 50 Exam #1 Review Sheet – Summer 2015

Please Note: The exam will cover 1.4-1.6, 2.1-2.6, 3.1-3.3. The review sheet is designed for you to have a guide as to what to study. The problems on the exam are not limited to the type of problems on this sheet. Any types of problem from the assigned homework problems are possible exam questions. Please attempt other practice problems other than those presented on this sheet in order to be completely prepared for the exam.

1. Perform the indicated operations.

a. $9770 \div 19$
b. $10,836 \div 28$
c. $235,600 \div 124$
d. $4,760 \div 0$
e. $0 \div 65,872$
f. $0 \div 0$
g. $-5+(-75)+43+26+(-4)$
h. $-7-8-(-62)-(-12)-42$
i. $(-4)^2$
j. -4^2
k. $\sqrt{-100}$
l. $(6)(-4)(3)$
m. $(-40) \div 10$

2. Evaluate the following.

a. $2^6 - 18 \div 3 \cdot 5 - \sqrt{100}$

b. $2(7-4)+8^2-(16+5) \div 7$

c. $31-3\left[(20-6)-3 \cdot 2\right]+2^4$

d. $\left\{18-4\left[21 \div (3+4)\right]\right\}+2\sqrt{16 \cdot 4}$

e. $4\left\{\left[25-(19+2)\right] \cdot (3+1)\right\}-(3+5)^2$

f. $\dfrac{(12-5)^2+2^3}{10 \div 2-(11-9)}$

g. $39 \div 3+(24-30)-5^2+(-21-(-13))$

h. $\left[19(-2)-(-18)\right]\div\left[15-5\left(2-(-1)\right)\right]$

i. $4\sqrt{16\cdot 9}-\left\{(-4)^3+2\left[18\div(-2)+\left(4-(-2)\right)\right]\right\}$

j. $-3\left\{14-2\left|20-7(4)\right|\right\}+\left[(3)(-9)-(-21)\right]^2$

k. $\dfrac{2^4+3(7+19)}{8^2-(2\cdot 8+1)}$

l. $\dfrac{2\left[5(3-7)+(-3)^3\right]-6}{15\cdot 5-(12-7)^2}$

m. $\dfrac{-3\left\{\left[2-7(3-4)\right]+4^2\right\}}{5\left[28+4(2-9)\right]^3}$

3. A financial planner is asked to split $16,800 evenly among 7 investments. How much does she put into each investment?

4. The federal government grants a state $5,473,000 to be distributed equally among the 13 technical colleges in the state. How much does each college receive?

5. A long-distance company charges 19 cents per minute. How long can you talk for $5? Explain.

6. A parallelogram has an area of 399 ft.^{2} If the height is 19 ft., find the base.

7. A parallelogram has an area of 2408 cm^2. If the base is 56 cm, find the height.

8. A box has a volume of 1368 m^3. If the width is 19 m and the height is 3 m, find the length.

9. A box has a volume of 30,600 cm^3. If the length is 60 cm and the height is 15 cm, find the width.

10. Angela plans to put a wallpaper border just below the ceiling in her bedroom. The room is 12 ft. by 14 ft. If the border costs $2 per foot, what will be the total cost?

11. Skip owns a rectangular plot of land that is 85 ft. by 280 ft. He plans to build a house that will measure 45 ft. by 55 ft. What will be the area of the surrounding lawn?

12. A box has a volume of 30,600 cm^3. If the length is 60 cm and the height is 15 cm, find the width.

13. Nine offices in an office building are to be painted. Each office is 10 ft. by 9 ft. and has 8 ft. ceilings. Each office has a 3ft. by 7 ft. doorway and a 3 ft. by 2 ft. window.

a. How many square feet will be painted?
b. If a gallon of paint will cover 400 square feet, then how many cans will be needed?
c. If each gallon costs $14, then what will be the total cost of the paint?

14. The outside of a large building is to be covered with 4 ft. by 8 ft. glass panels. The building is a box that is 75 ft, by 60 ft. by 150 ft. How many glass panels will be needed? (Note: The roof will not be covered with the panels.)

15. Brian has a credit of $86 on his account with an audio-video store. He uses his credit account to purchase some equipment at a total cost of $585. What is his new balance?

16. The temperature at sunset was reported to be $19°F$. By midnight it is reported to be $-27°F$. What is the amount of the decrease?

17. An oil company drill team estimated the depth to an oil pocket to be -450 ft. After drilling 3 times that depth they finally found oil. At what depth did they find oil?

18. Lynn takes out a loan to buy a fixer-upper house. She then spends $4500 in repairs and improvements. She sells the house for $80,560. If the pay-off for the loan that she took out to buy the house is $71,484, what is her net? Is it a profit or loss?

19. The elevator in the Empire State Building travels from the lobby to the 80^{th} floor, a distance of about 968 ft., in about 44 sec. What is the average rate of the elevator?

20. A research submarine is lowered at an average rate of 7 ft. per sec. What will be the submarine's depth after 29 sec.?

21. Check to see if the given number is a solution for the given equation.

a. $-5a+19=9;$ check $a=2$
b. $18-7n=2n;$ check $n=-2$
c. $b^2=5b+6;$ check $b=-1$
d. $3(x-5)-1=11-2(x+1);$ check $x=5$

22. Evaluate the following expressions using the given values.

a. $3y-5(y+2); y=4$
b. $3t^2-4u+1; t=-2, u=4$
c. $b^2-4ac; b=3, a=-5, c=-1$
d. $-|5x|+|y^3|; x=6, y=-3$
e. $\sqrt{m}+\sqrt{n}; m=144, n=25$

f. $\sqrt{x^2+y^2}; x=-3, y=4$

g. $3xy-2\sqrt{5x+y}; x=2, y=-1$

h. $\dfrac{-6uv+14}{3u-v^2}; u=-1, v=4$

23. Simplify the following, rewrite the resulting polynomial in descending order and give the degree of the resulting polynomial.

a. $t^5+7t^2-20+6t^4-7t^2+9t^3+18-4t-8t^5$

b. $-3y^2+15y-13-6y^2+9y^4-8y^3-12y^4+13+3y-10y^4$

24. Translate the following to an expression.

a. Five more than a number.
b. The difference of a number and nine.
c. Six less than a number.
d. A number decreased by twenty-four.
e. Eighteen subtracted from negative seven times *y*.
f. Thirty-nine minus five times *x*
g. The product of eight and *x*.
g. Forty less than the product of three and *y* is equal to seven times *y*.
h. Six times *x* plus five times the difference of *x* and seven
i. Nineteen minus the sum of *x* and six.
j. Twice *r* subtracted from seven times the sum of *r* and one
k. Three times the difference of *r* and five.
l. The sum of *n* and three subtracted from twelve times *n*
m. Negative eleven plus the product of 2 and the difference of *n* and five.

25. Add or subtract the following polynomials.

a. $\left(-2b^6+3b^4-b^2\right)+\left(b^6+2b^4+2b^2\right)$

b. $\left(x^5+9x^4-18x^3-5x^2+6x-9\right)+\left(-2x^5-3x^4+4x^3-x^2-6x+8\right)$

c. $\left(5x^2y-2xy+9xy^2\right)-\left(8x^2y+13xy+12xy^2\right)$

d. $\left(-5x^4+6x^3-9x^2+12x+13\right)-\left(3x^4+6x^3+2x^2-8x+2\right)$