

**MAT 060 - Practice Exam 11-12 - F10**

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Name: \_\_\_\_\_

Class: \_\_\_\_\_

Date: \_\_\_\_\_

1. Given  $a = -3$ ,  $b = 6$ , and  $c = -2$ . Evaluate the following expressions:

(a)  $2a - 3c$

1(a) \_\_\_\_\_

(b)  $b \div a - b \cdot c$

1(b) \_\_\_\_\_

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

1(c) \_\_\_\_\_

(d)  $a^2 - b^2 - c^2$

1(d) \_\_\_\_\_

(e)  $a^3 + c^3$

1(e) \_\_\_\_\_

Simplify the following expressions.

2. (a)  $8x + (-5x)$

2(a) \_\_\_\_\_

(b)  $4x^2 + 3x - 5x^2 + 7$

2(b) \_\_\_\_\_

(c)  $3x^2 - 4y + 8x^2$

2(c) \_\_\_\_\_

(d)  $-3a + 4b + 4a - 3b + 5c - b$

2(d) \_\_\_\_\_

(e)  $-8a + 7b - c + 4a - 3b + 4c$

2(e) \_\_\_\_\_

Simplify the following expressions.

3. (a)  $3(3x + 2)$

3(a) \_\_\_\_\_

(b)  $-4(2 - 7x)$

3(b) \_\_\_\_\_

(c)  $5x - 2(x - 3)$

3(c) \_\_\_\_\_

(d)  $-7x + 2(x - 3) + 10$

3(d) \_\_\_\_\_

(e)  $5x^2 - 4(2x + 8) - 4x$

3(e) \_\_\_\_\_

Solve the following equations for indicated variable.

4.  $y - 6 = 16$

4. \_\_\_\_\_

5.  $5x = 30$

5. \_\_\_\_\_

6.  $-\frac{4}{5}x = 20$

6. \_\_\_\_\_

7.  $7 - 3x = 4$

7. \_\_\_\_\_

8.  $-7a + 4 = 25$

8. \_\_\_\_\_

9.  $3x - 5x + 7 = 4x - 2 + 8$

9. \_\_\_\_\_

10.  $9x - 5(x - 3) = 5(x + 4)$

10. \_\_\_\_\_

11.  $2(x - 6) + 7x = 5 - 3(x - 2)$

11. \_\_\_\_\_

Translate the following verbal expressions into mathematical expressions.

12. (a) 9 less than  $y$  12(a) \_\_\_\_\_

(b) The quotient of  $x$  and the sum of 9 and  $x$  12(b) \_\_\_\_\_

(c) Six less than the total of 4 and a number 12(c) \_\_\_\_\_

(d) 5 more than twice the sum of  $x$  and 7 12(d) \_\_\_\_\_

(e) 7 times the square of  $x$  divided by the difference of  $x$  and 5 12(e) \_\_\_\_\_

Translate the following verbal expressions into mathematical expressions. and solve for the variable.

13. The sum of 3 times a number and 4 is 8. Find the number.

13. \_\_\_\_\_

14. The quotient of x and 4 is 8 Find the number.

14. \_\_\_\_\_

15. The difference between 7 and twice a number is 13. Find the number.

15. \_\_\_\_\_

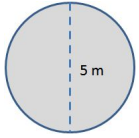
16. The total of 10 times a number and 20 is 6 times the same number. Find the number.

16. \_\_\_\_\_

17. A bank is lending you \$20,000 dollars at an annual interest rate of 8.5%. The loan will last 10 years.
- (a) How much is the simple interest due on the loan? 17(a) \_\_\_\_\_
- (b) What is the maturity value (or future value) of the loan? 17(b) \_\_\_\_\_
- (c) What are the monthly payments on the loan? 17(c) \_\_\_\_\_
18. You have invested \$10,000 in a money market account that pays 5% interest compounded quarterly. How much interest will you have earned on the investment after 10 years
18. \_\_\_\_\_
19. Jay is buying a new house for \$250,000. A down payment of 20% must be made to obtain a monthly mortgage rate of 5% for 25 years. A loan origination fee of 3.5 points is required.
- (a) What is the down payment amount? 19(a) \_\_\_\_\_
- (b) What is the amount of the mortgage Jay is taking out? 19(b) \_\_\_\_\_
- (c) What is the loan origination fee? 19(c) \_\_\_\_\_
- (d) What are the monthly mortgage payments on the house? 19(d) \_\_\_\_\_



20. Answer the following questions about the object below:



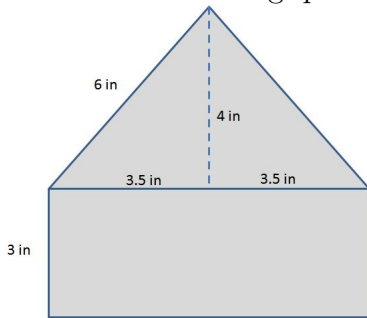
(a) Perimeter

20(a) \_\_\_\_\_

(b) Area

20(b) \_\_\_\_\_

21. Answer the following questions about the object below:



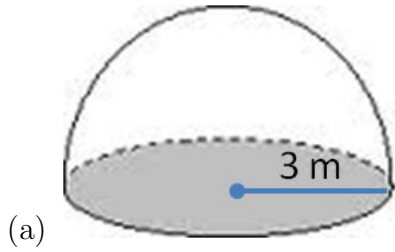
(a) Perimeter

21(a) \_\_\_\_\_

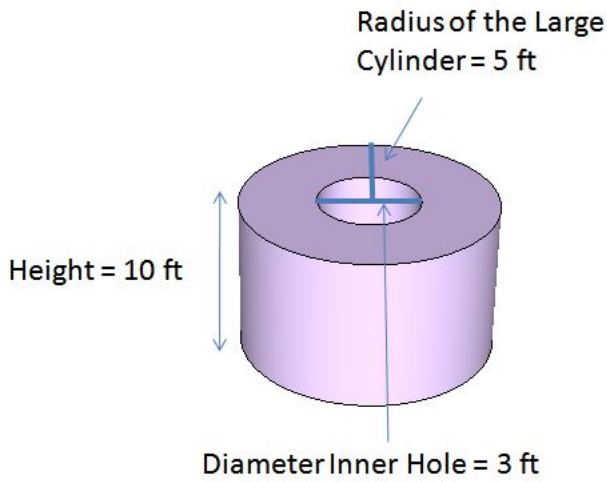
(b) Area

21(b) \_\_\_\_\_

22. What is the Volume of the following objects:

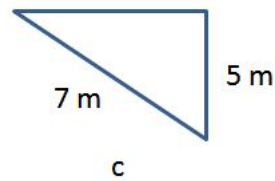
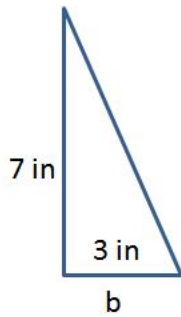
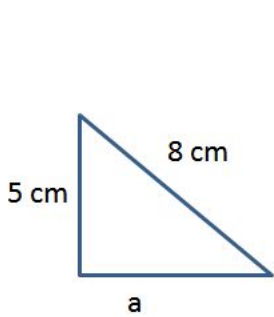


22(a) \_\_\_\_\_



22(b) \_\_\_\_\_

23. Find the unknown side of the triangle in the following figures. Round to the nearest thousandths.



23(a) \_\_\_\_\_

23(b) \_\_\_\_\_

23(c) \_\_\_\_\_