

Name \_\_\_\_\_

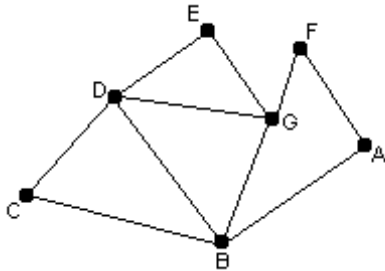
Miami Dade College

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine whether the given path is an Euler Path, an Euler Circuit, or neither.

1)

1) \_\_\_\_\_



F,A,B,G,D,B,C,D,G,F

A) Euler circuit

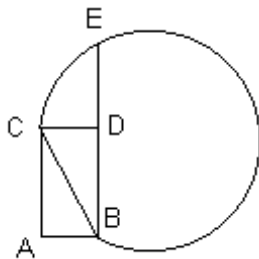
B) Euler path

C) neither

Solve.

2)

2) \_\_\_\_\_



The graph above has a possible path E-B-A-C-B-D-C-E. Trace this path with your pencil and determine whether it is an Euler circuit.

A) no

B) yes

Answer true or false.

3) An Euler circuit always starts and ends at the same vertex.

3) \_\_\_\_\_

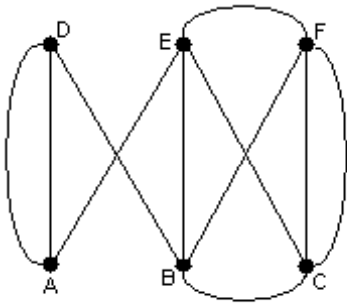
A) True

B) False

Use Euler's theorem to determine whether the graph has an Euler path (but not an Euler circuit), Euler circuit, or neither.

4)

4) \_\_\_\_\_



A) neither

B) Euler path

C) Euler circuit

Answer true or false.

5) A graph with no odd vertices has at least one Euler circuit?

5) \_\_\_\_\_

A) true

B) false

Use Euler's theorem to determine whether the graph has an Euler path (but not an Euler circuit), Euler circuit, or neither.

6) The graph has 74 even vertices and no odd vertices.

6) \_\_\_\_\_

A) Euler path

B) Euler circuit

C) neither

Use the preference table to answer the question.

7) Four students are running for president of their class: Debra (D), Farah (F), Jorge (J), and Hillary (H).

7) \_\_\_\_\_

The votes of their fellow students are summarized in the following preference table.

Number of Votes	51	45	16	5	5
First choice	H	F	J	F	H
Second choice	F	J	F	J	J
Third choice	D	H	H	D	D
Fourth choice	J	D	D	H	F

Who is declared the new president using the plurality method?

A) Jorge

B) Hillary

C) Debra

D) Farah

8) Four students are running for president of their class: Debra (D), Farah (F), Jorge (J), and Hillary (H). The votes of their fellow students are summarized in the following preference table.

8) \_\_\_\_\_

Number of Votes	51	45	16	5	5
First choice	H	F	J	F	H
Second choice	F	J	F	J	J
Third choice	D	H	H	D	D
Fourth choice	J	D	D	H	F

Who is declared the new president using the Borda count method?

A) Farah

B) Hillary

C) Debra

D) Jorge

Convert the numeral to a numeral in base ten.

9)  $3205_{\text{six}}$

9) \_\_\_\_\_

A) 43

B) 125

C) 725

D) 4325

- 10)  $3207_{\text{nine}}$  A) 268 B) 2943 C) 2356 D) 28,863 10) \_\_\_\_\_

Use divisions to convert the base ten numeral to a numeral in the given base.

- 11) 205 to base four A)  $3031_{\text{four}}$  B)  $3301_{\text{four}}$  C)  $331_{\text{four}}$  D)  $3331_{\text{four}}$  11) \_\_\_\_\_

- 12) 295 to base six A)  $1211_{\text{six}}$  B)  $121_{\text{six}}$  C)  $1221_{\text{six}}$  D)  $2211_{\text{six}}$  12) \_\_\_\_\_

Use the order of operations to find the value of the expression.

- 13)  $4 - 5(-9 + 5)$  A) 24 B) 74 C) 54 D) 4 13) \_\_\_\_\_

- 14)  $7 - 5(9 - 7) - 8$  A) 9 B) -11 C) -4 D) 3 14) \_\_\_\_\_

- 15)  $(2 + 1)^3 - (3 - 1)^3$  A) -19 B) 19 C) 37 D) -37 15) \_\_\_\_\_

Express the number in decimal notation.

- 16)  $8.88 \times 10^{-4}$  A) 0.000888 B) 0.0000888 C) 0.00888 D) -888,000 16) \_\_\_\_\_

- 17)  $7 \times 10^5$  A) 7000 B) 700,000 C) 0.00007 D) 350 17) \_\_\_\_\_

Express the number in scientific notation.

- 18) 0.000792 A)  $7.92 \times 10^4$  B)  $7.92 \times 10^{-5}$  C)  $7.92 \times 10^{-3}$  D)  $7.92 \times 10^{-4}$  18) \_\_\_\_\_

- 19) 890 A)  $8.9 \times 10^2$  B)  $8.9 \times 10^3$  C)  $89 \times 10^2$  D)  $89 \times 10$  19) \_\_\_\_\_

Evaluate the algebraic expression for the given value(s) of the variable(s).

- 20)  $(x + 2y)^2$ ;  $x = 3, y = 3$  A) 81 B) 18 C) 9 D) 25 20) \_\_\_\_\_

- 21)  $\frac{x^2 - 10x + 5}{x^2 + 2x - 1}$ ;  $x = 4$  A)  $-\frac{19}{23}$  B)  $\frac{19}{23}$  C)  $-\frac{19}{25}$  D)  $\frac{61}{23}$  21) \_\_\_\_\_

Solve and check the equation.

- 22)  $4(2y - 2) = 7(y + 5)$  A) {27} B) {31} C) {43} D) {-27} 22) \_\_\_\_\_

23)  $7x - (2x - 1) = 2$

A)  $\left\{\frac{1}{9}\right\}$

B)  $\left\{\frac{1}{5}\right\}$

C)  $\left\{-\frac{1}{5}\right\}$

D)  $\left\{-\frac{1}{9}\right\}$

23) \_\_\_\_\_

24)  $4(3x - 1) + 3(3x + 2) = 4x - 66$

A) {1}

B) {-8}

C) {-4}

D) {-10}

24) \_\_\_\_\_

25)  $10(2x - 5) - 3 = 10(x - 4) + (7)$

A) {-1}

B) {4}

C) {2}

D) {-3}

25) \_\_\_\_\_

Inequalities, functions, graphs.

1. Simplify the algebraic expression:

a.  $5(2x - 1)$       b.  $5(2y - 9) - (8y + 3)$

2. Solve the equation. Be sure to check your proposed solution by substituting it for the variable in the original equation.

a.  $x - 10 = 5$       b.  $3(8x - 2) = 48$       c.  $4x - 1 = 19$       d.  $4x = 32$       e.  $6x - (3x + 12) = 12$

3. Solve the following inequality and graph the solution set on a number line.

a.  $x - 5 < 2$       b.  $-x < -2$       c.  $12(x + 1) - 23 < 11x + 1$

d.  $-8 \leq x - 7 < 1$       e.  $-37 < 12x - 1 \leq -25$

4. Evaluate  $f(x)$  for the given values for  $x$ . Then use the ordered pairs  $(x, f(x))$  from the table to graph the function.

a.  $f(x) = 3x - 2$       b.  $f(x) = 2x + 5$       c.  $f(x) = x + 7$

5. Use the following function  $f(x) = x - 9$  to find  $f(11)$  and  $f(3)$ .

6. Graph the linear equations:  $y = 2x + 6$       b)  $x + 2y = 0$

7. Graph the linear function using the slope and y intercept.  $f(x) = \frac{1}{2}x + 1$

8. Rewrite  $-7x + y = 3$  in slope intercept form.

a. Give the slope and y-intercept.

b. Graph the equation.

9. Given  $5x + 7y = 35$

a. Put the equation in slope intercept form.

b. Identify the slope and the y-intercept.

c. Use the slope and y intercept to graph the line.

10. Graph the following equation in a rectangular coordinate system.

a.  $y = -1$       b.  $x = 3$