MGF1107 Final Exam
Mr. Foley

Name_____

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

Express the rational number as a terminating or repeating decimal number.

1) $\frac{78}{100}$ 1) _____

A) 7.8 B) 0.39 C) 0.078 D) 0.78

2) $\frac{3}{7}$ 2) _____

A) 0.428571 B) $0.\overline{428571}$ C) $0.428\overline{571}$ D) $0.\overline{42857}$

Write the fraction in lowest terms.

3) $\frac{24}{166}$ 3) _____

A) $\frac{12}{83}$ B) $\frac{25}{167}$ C) $\frac{83}{12}$ D) $\frac{165}{23}$

Write the fraction that represents the shaded area.

4) 4) _____

A) $\frac{5}{8}$ B) $\frac{3}{8}$ C) $\frac{3}{5}$ D) $\frac{5}{3}$

Perform the operation and give the answer as a fraction in lowest terms.

5) $\left(\frac{11}{13}\right)\left(-\frac{2}{9}\right)$ 5) _____

A) $\frac{9}{22}$ B) $-\frac{26}{99}$ C) $-\frac{22}{117}$ D) $-\frac{11}{117}$

6) $\left(-\frac{2}{3}\right) \div \left(\frac{1}{5}\right)$ 6) _____

A) $-\frac{10}{3}$ B) $-\frac{2}{3}$ C) $-\frac{7}{4}$ D) $-\frac{2}{15}$

Write the fraction as a terminating decimal.

7) $\frac{23}{25}$ 7) _____

A) 0.92 B) 0.98 C) 0.72 D) 0.84

Decide if the number is rational or irrational.

8) $\sqrt{36}$ 8) _____

A) Irrational B) Rational

Simplify. Then use your calulator to approximate.

9) $\sqrt{135}$ 9) _____

A) $15\sqrt{3}$ B) $3\sqrt{15}$ C) 45 D) 11

Perform the indicated operations.

10) $8\sqrt{5} + 4\sqrt{45}$ 10) _____

A) $-20\sqrt{5}$ B) $-5\sqrt{5}$ C) $20\sqrt{5}$ D) $12\sqrt{5}$

Provide an appropriate response.

11) _____ is interest paid only on the original principal, and not on any interest added at later dates. 11) _____

A) Compound Interest B) Simple interest

C) Basic interest D) None of the above

12) _____ is interest paid both on the original principal and on all interest that has been added to the original principal. 12) _____

A) Compound interest B) Basic interest

C) Simple interest D) None of the above

Calculate the amount of interest you'll have at the end of the indicated period.

13) You invest $200 in an account that pays simple interest of 4% for 6 years. 13) _____

A) $4.80 B) $133.33 C) $8.33 D) $48.00

Use the compound interest formula for compounding more than once a year to determine the accumulated balance after the stated period.

14) $1300 deposit at an APR of 6% with quarterly compounding for 5 years 14) _____

A) $1690.00 B) $1739.69 C) $1400.47 D) $1750.91

Solve the problem.

Monthly Payment per $1000 of Mortgage

Interest rate	Monthly payment			
	15-year loan	20-year loan	25-year loan	30-year loan
9.5%	$10.45	$9.33	$8.73	$8.41
10.0%	$10.75	$9.66	$9.09	$8.78
10.5%	$11.06	$9.99	$9.45	$9.15
11.0%	$11.37	$10.33	$9.81	$9.53
11.5%	$11.69	$10.66	$10.16	$9.90
12.0%	$12.01	$11.01	$10.53	$10.29
12.5%	$12.33	$11.36	$10.90	$10.67
13.0%	$12.66	$11.72	$11.28	$11.06

15) What is the monthly payment on a 25–year loan of $73,000 if the annual interest rate is 10%? 15) _____

A) $663.57 B) $689.85 C) $729.27 D) $637.29

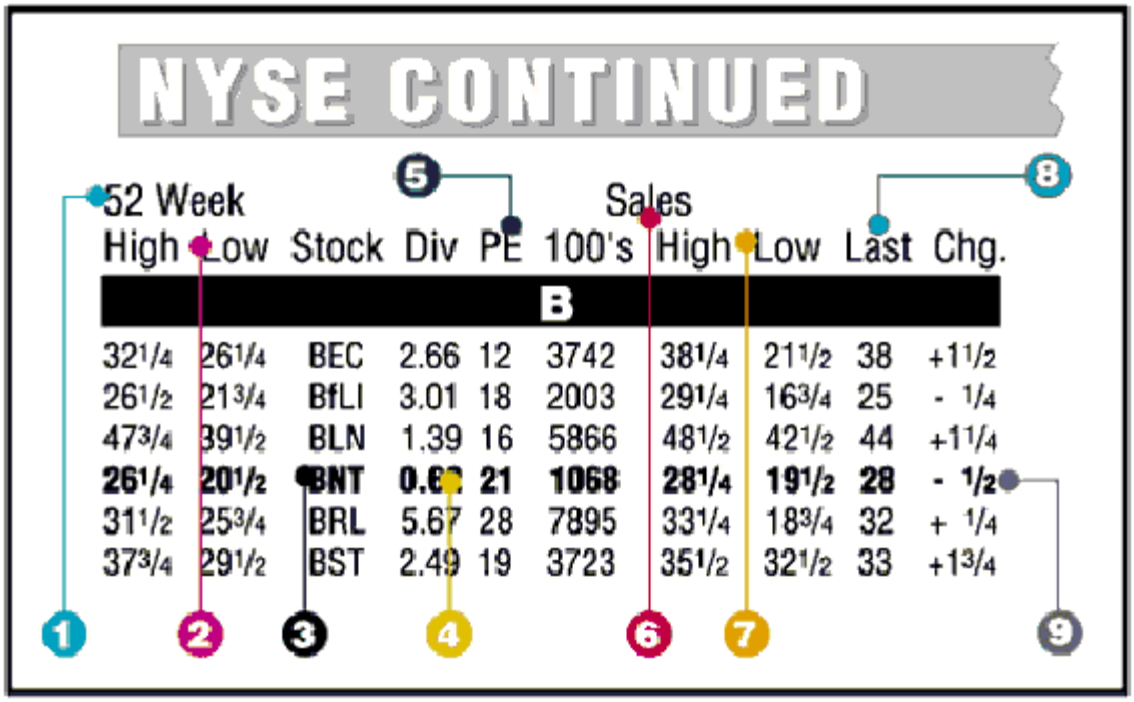
Use the Table Consumer Price Index below to answer the question. The reference value for this CPI is an average of prices during the period 1982–1984.

YEAR	CPI	YEAR	CPI
1986	109.6	1994	148.2
1987	113.6	1995	152.4
1988	118.3	1996	156.9
1989	124.0	1997	160.5
1990	130.7	1998	163.0
1991	136.2	1999	166.6
1992	140.3	2000	172.2
1993	144.5	2001	177.1

16) Find the inflation rate from 1987 to 1988. 16) _____

A) 1.0% B) 4.1% C) 4.5% D) 4.0%

17) 17) _____



Using the sample table above, what are the the dividends per share for BLN corp.

A) 0.62 B) 5.67 C) 3.01 D) 1.39

18) Using thesample table above, how many shares of BEC were traded that day. 18) _____

A) 3 742 000 B) not available C) 374 200 D) 3 742

19) Using the sample table above, which stock had the greatest change in share price from the opening of the market? 19) _____

A) BLN B) BST C) BEC D) BRL

20) Using the sample table above, whch stock had the lowest price to earnings ratio (divide the price by the earnings per share over the last 12 months). 20) _____

A) BLN B) BST C) BRL D) BEC

Divisible by	Test	Divisible by	Test
2	The last digit is even	8	Last three digits divisible by 8
3	Sum of digits is divisible by 3	9	Sum of digits divisible by 9
4	Last 2 digits divisible by 4	10	Last digit 0
5	Ends in 0 or 5	12	Divisible by 4 and 4
6	Divisible by 2 and 3		

Determine whether or not the first number is divisible by the second number
CAUTION: The yes/no answer choices are switched between questions.

21) 797,886; 3 21) _____
A) Yes B) No

22) 12,728; 8 22) _____
A) No B) Yes

Find the prime factorization of the number.

23) 154 23) _____
A) $7^2 \cdot 2$ B) $2 \cdot 7 \cdot 11$ C) $14 \cdot 11$ D) $2^2 \cdot 11$

Find the greatest common divisor (GCD).

24) 12 and 16 24) _____
A) 2 B) 4 C) 1 D) 12

Find the least common multiple (LCM).

25) 120 and 270 25) _____
A) 3240 B) 30 C) 1080 D) 2160

Solve.

26) Several different bus routes stop at the corner of Second St. and Lincoln Ave. A Wilkenson bus arrives every 27 minutes and a Harris Road bus arrives every 15 minutes. If both buses arrive at the stop at 5:07 AM, when will they again arrive at the same time? (HINT: find the LCM of 15 min & 27 min, this is the next time they are "the same"). 26) _____
A) 9:12 AM B) 6:42 AM C) 7:22 AM D) 11:52 AM

Determine whether the sequence is a Fibonacci–type sequence. If it is, determine the next two terms of the sequence.

27) 3, 2, 5, 7, 9 ... 27) _____
A) Yes; 11, 22 B) No C) Yes; 10, 16 D) Yes; 11, 13

Provide an appropriate response.

28) List the first seven terms of the Fibonacci sequence. 28) _____
A) 1, 2, 4, 6, 10, 16, 26 B) 1, 1, 2, 3, 5, 8, 13
C) 1, 2, 3, 5, 8, 13, 21 D) 1, 1, 3, 4, 7, 11, 18

Solve the problem.

29) If June is your starting month, what month will it be 16 months from June? 29) _____
A) February B) October C) July D) November

Find the modulo class to which the number belongs for the given modulo system.

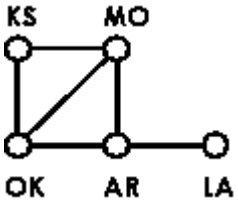
30) 54, mod 11 30) _____

A) 4 B) 8 C) 10 D) 3

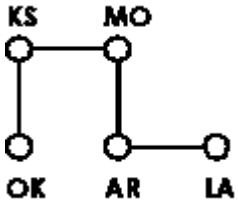
Represent the following with a graph.

31) 31) _____

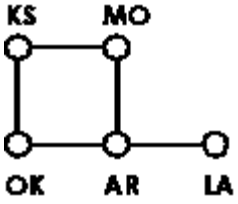
A)



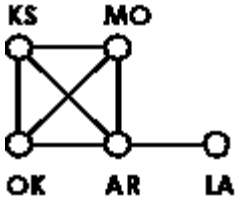
B)



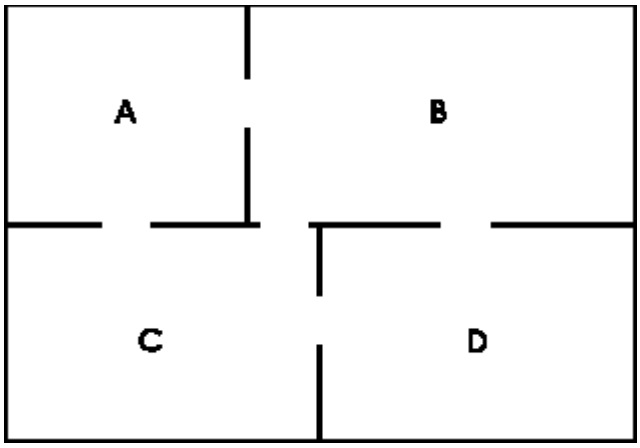
C)



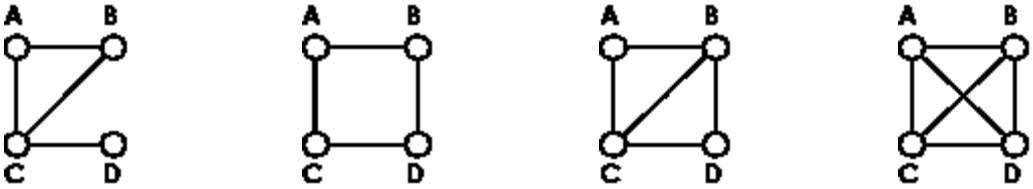
D)



32) 32) _____

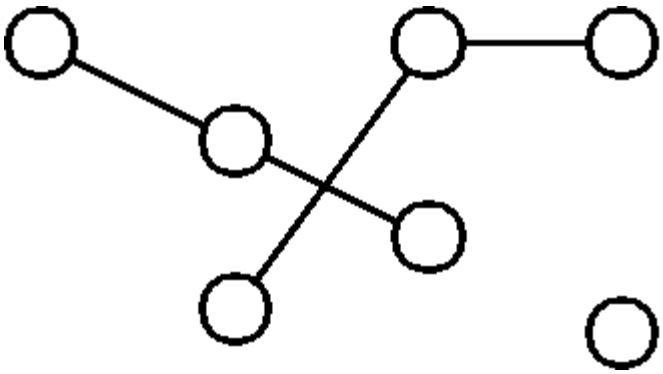


A) B) C) D)



Determine whether the graph is connected or disconnected.

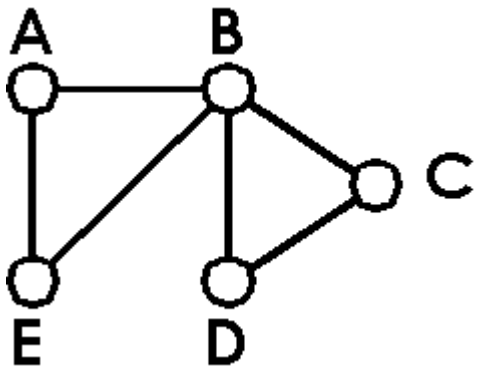
33) 33) _____



A) Connected B) Disconnected

Give an appropriate answer.

34) Using the following graph, find an Euler circuit that begins and ends with vertex A. 34) _____



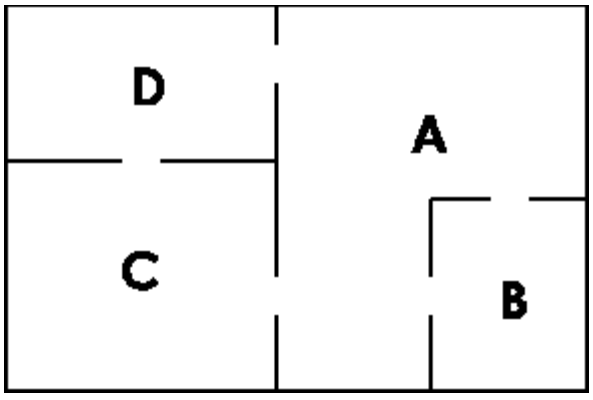
A) A → B → C → D → E → A → B
B) A → B → C → D → B → E → A
C) A → B → C → D → B → A
D) No Euler circuit exists.

Solve the problem.

35) The map shows the states Tennessee, Alabama, Georgia, and Mississippi. Is it possible to find a route that starts in Georgia and crosses each common state border exactly one time? 35) _____

A) No
B) Yes

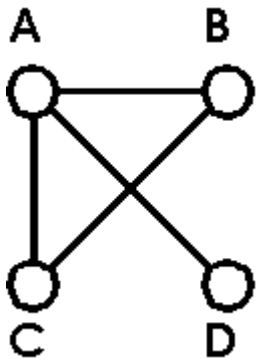
36) Using the following floor plan, find a path that begins and ends in room A and passes through each doorway exactly once. 36) _____



A) A → B → A → C → D → A
B) No such route exists.
C) A → D → C → A → B → D →A
D) A → D → C → A → B

Find two different Hamilton paths for the given graph.

37) 37) _____

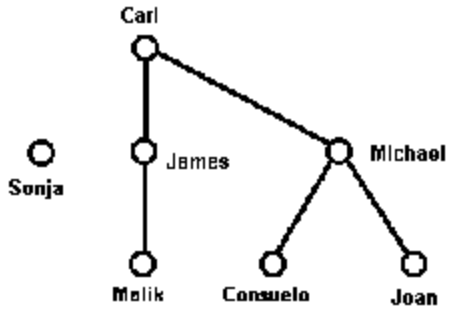


A) The graph does not have two different Hamilton paths.
B) A → B → C → A → D ; A → C → B → A → D
C) C → B → A → D ; D → B → A → C
D) D → A → C → B ; D → A → B → C

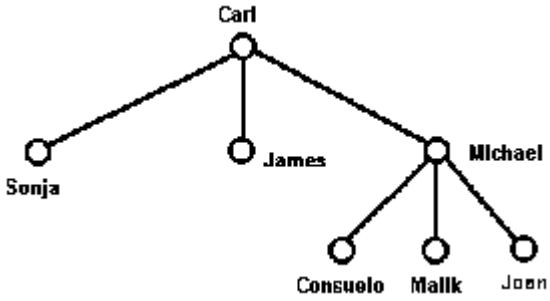
Solve the problem.

38) Use a tree to show the parent–child relationships in the following family. Carl has three children: Sonja, James, and Michael. James has one child: Malik. Michael has two children: Consuelo and Joan. Sonja has no children. 38) _____

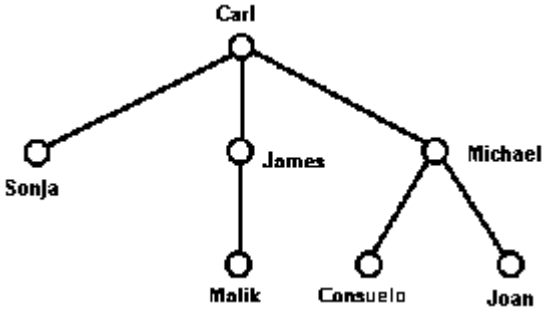
A)



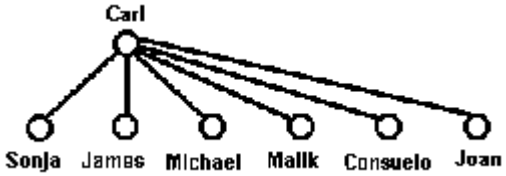
B)



C)

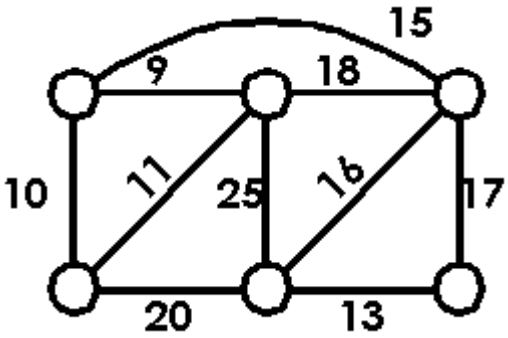


D)

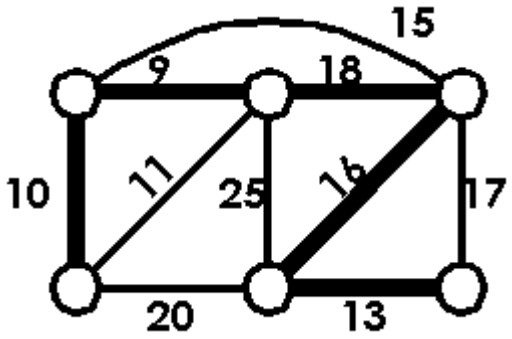


Find the minimum–cost spanning tree for the graph.

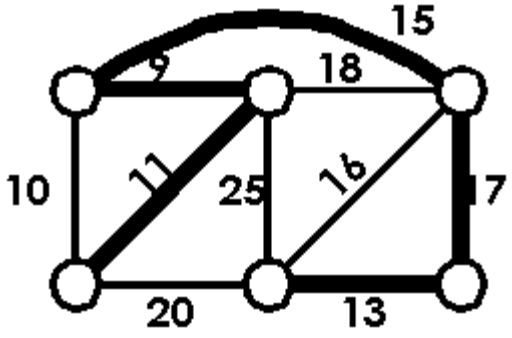
39) 39) _____



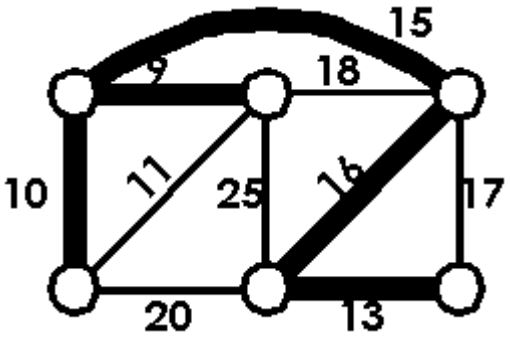
A)



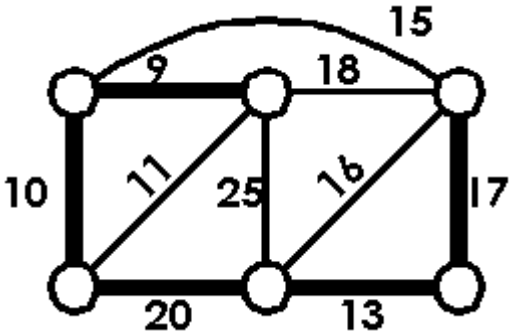
B)



C)



D)



40) Compute the following: 2 + 2 = 40) _____

A) Not this one.
B) Not this one.
C) 4
D) You've gone to far.

Answer Key
Testname: 20182-FINALEXAM

1) D
2) B
3) A
4) B
5) C
6) A
7) A
8) B
9) B
10) C
11) B
12) A
13) D
14) D
15) A
16) B
17) D
18) C
19) B
20) D
21) A
22) B
23) B
24) B
25) C
26) C
27) B
28) B
29) B
30) C
31) A
32) C
33) B
34) B
35) A
36) A
37) D
38) C
39) C
40) C