

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

Find the measure of the complement of the angle.

1) Find the complement of 18° .

- A) 72° B) 162° C) 252° D) 342°

1) _____

Find the measure of the supplement of the angle.

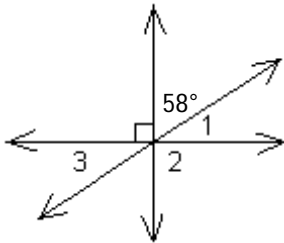
2) Find the supplement of 26° .

- A) 244° B) 334° C) 64° D) 154°

2) _____

Find the measures of angles 1, 2, and 3.

3)

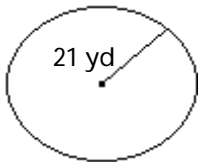


- A) $\angle 1 = 32^\circ$; $\angle 2 = 116^\circ$; $\angle 3 = 32^\circ$ B) $\angle 1 = 32^\circ$; $\angle 2 = 90^\circ$; $\angle 3 = 32^\circ$
 C) $\angle 1 = 122^\circ$; $\angle 2 = 58^\circ$; $\angle 3 = 122^\circ$ D) $\angle 1 = 32^\circ$; $\angle 2 = 90^\circ$; $\angle 3 = 58^\circ$

3) _____

Find the circumference and area of the circle. Round the answer to the nearest whole number.

4)

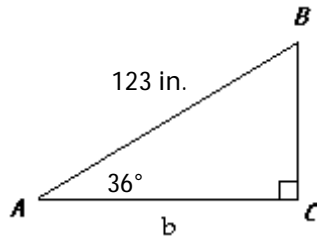


- A) 66 yd, 5542 yd^2 B) 132 yd, 132 yd^2
 C) 66 yd, 264 yd^2 D) 132 yd, 1385 yd^2

4) _____

Find the measure of the side of the right triangle whose length is designated by the lowercase letter. Round your answer to the nearest whole number.

5)



- A) 93 in. B) 100 in. C) 95 in. D) 89 in.

5) _____

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

Complete the truth table by filling in the required columns.

6) $p \wedge \sim q$

p	q	$\sim q$	$p \wedge \sim q$
T	T		
T	F		
F	T		
F	F		

Construct a truth table for the statement.

7) $\sim(p \vee q) \wedge \sim p$

8) $\sim p \rightarrow \sim q$

9) $\sim s \rightarrow (\sim s \wedge t)$

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

Given that p and q each represents a simple statement, write the indicated symbolic statement in words.

10) p: The car has been repaired.

q: The kids are home.

r: We will visit Aunt Tillie.

$\sim r \rightarrow (\sim p \vee \sim q)$

A) If we visit Aunt Tillie, then the car has been repaired or the kids are home.

B) If we will not visit Aunt Tillie, then the car has not been repaired or the kids are not home.

C) We will not visit Aunt Tillie if and only if the car has not been repaired or the kids are not home.

D) If we will not visit Aunt Tillie, then the car has not been repaired and the kids are not home.

10) _____

Use \subseteq , $\not\subseteq$, \subset , or both \subset and \subseteq to make a true statement.

11) $\{a, b\}$ ___ $\{z, a, y, b, x, c\}$

A) $\not\subseteq$

B) \subset

C) \subset and \subseteq

D) \subseteq

11) _____

List all the subsets of the given set.

12) $\{15\}$

A) $\{15\}$

B) $\{0\}, \{15\}, \{ \}$

C) $\{ \}$

D) $\{15\}, \{ \}$

12) _____

Calculate the number of subsets and the number of proper subsets for the set.

13) $\{1, 3, 5, 7, 9, 11\}$

A) 64; 63

B) 63; 64

C) 62; 63

D) 63; 62

13) _____

Determine whether the statement is true or false.

14) $17 \notin \{1, 2, 3, \dots, 10\}$

A) True

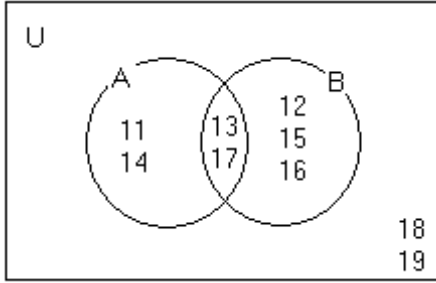
B) False

14) _____

Use the Venn diagram to list the elements of the set in roster form.

15) List the elements of A.

15) _____



A) {13, 17}

B) {11, 12, 13}

C) {11, 13, 14, 17}

D) {12, 15, 16}

Let $U = \{q, r, s, t, u, v, w, x, y, z\}$

$A = \{q, s, u, w, y\}$

$B = \{q, s, y, z\}$

$C = \{v, w, x, y, z\}$. List the elements in the set.

16) $A \cap B'$

16) _____

A) {t, v, x}

B) {u, w}

C) {r, s, t, u, v, w, x, z}

D) {q, s, t, u, v, w, x, y}

17) $C' \cap A'$

17) _____

A) {w, y}

B) {q, s, u, v, w, x, y, z}

C) {r, t}

D) {q, r, s, t, u, v, x, z}

Use sets to solve the problem.

18) Monticello residents were surveyed concerning their preferences for candidates Moore and Allen in an upcoming election. Of the 800 respondents, 300 support neither Moore nor Allen, 100 support both Moore and Allen, and 250 support only Moore. How many residents support only Allen?

18) _____

A) 300

B) 150

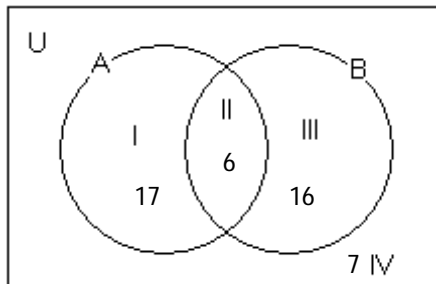
C) 100

D) 250

Use the accompanying Venn diagram that shows the number of elements in regions I through IV to answer the question.

19)

19) _____



How many elements belong to set B but not set A?

A) 16

B) 6

C) 17

D) 7

Use a Venn diagram to answer the question.

20) At East Zone University (EZU) there are 915 students taking College Algebra or Calculus. 505 are taking College Algebra, 496 are taking Calculus, and 86 are taking both College Algebra and Calculus. How many are taking Calculus but not Algebra?

20) _____

A) 333

B) 410

C) 829

D) 419

21) A church has 10 bells in its bell tower. Before each church service 4 bells are rung in sequence. No bell is rung more than once. How many sequences are there? 21) _____
 A) 210 B) 5040 C) 302,400 D) 151,200

22) In how many ways can a committee of three men and four women be formed from a group of 10 men and 10 women? 22) _____
 A) 50,400 B) 3,628,800 C) 25,200 D) 70

23) A box contains 23 widgets, 4 of which are defective. If 4 are sold at random, find the probability that (a) all are defective (b) none are defective. 23) _____
 A) $\frac{4}{23}; \frac{19}{23}$ B) $\frac{1}{23}; \frac{4}{23}$ C) $\frac{1}{212520}; \frac{1}{53130}$ D) $\frac{1}{8855}; \frac{3876}{8855}$

24) If you are dealt 5 cards from a shuffled deck of 52 cards, find the probability that all 5 cards are picture cards. 24) _____
 A) $\frac{1}{216580}$ B) $\frac{3}{13}$ C) $\frac{33}{108290}$ D) $\frac{1}{2598960}$

You randomly select one card from a 52-card deck. Find the probability of selecting:

25) an ace or a 8? 25) _____
 A) $\frac{2}{13}$ B) 9 C) $\frac{9}{26}$ D) $\frac{13}{2}$

Solve the problem involving probabilities with independent events.

26) A spinner is used for which it is equally probable that the pointer will land on any one of six regions. Three of the regions are colored red, two are colored green, and one is colored yellow. If the pointer is spun three times, find the probability it will land on green every time. 26) _____
 A) $\frac{2}{27}$ B) $\frac{1}{18}$ C) $\frac{1}{27}$ D) $\frac{1}{9}$

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

Find the mean, median, mode, range, midrange and the standard deviation for the group of data items. Round to the nearest hundredth, if necessary.

27) 4, 12, 5, 2, 11, 9, 8, 5

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

Provide an appropriate response.

28) In a normal distribution, approximately what percent of data items fall within 1 standard deviation of the mean (in both directions)? 28) _____
 A) 65% B) 99.7% C) 95% D) 68%

Suppose that prices of a certain model of new homes are normally distributed with a mean of \$150,000. Use the 68-95-99.7 rule to find the percentage of buyers who paid:

29) between \$147,600 and \$152,400 if the standard deviation is \$2400. 29) _____
 A) 95% B) 99.7% C) 34% D) 68%

30) between \$150,000 and \$154,200 if the standard deviation is \$2100. 30) _____
 A) 68% B) 47.5% C) 34% D) 99.7%

31) between \$150,000 and \$152,700 if the standard deviation is \$900.

A) 34%

B) 47.5%

C) 49.85%

D) 99.7%

31) _____

A set of data items is normally distributed with a mean of 60. Convert the data item to a z-score, if the standard deviation is as given.

32) data item: 70; standard deviation: 10

A) 10

B) 1

C) 70

D) 6

32) _____

Use the table of z-scores and percentiles to find the percentage of data items in a normal distribution that lie a. above and b. below the given score.

33) $z = 0.3$

A) 38.21%, 61.79%

B) 61.79%, 38.21%

C) 61.79%, 61.79%

D) 0%, 100%

33) _____

Use a table of z-scores and percentiles to find the percentage (to the nearest whole percentage) of data items in a normal distribution that lie between:

34) $z = 1$ and $z = 2$

A) 8%

B) 14%

C) 12%

D) 6%

34) _____

Answer Key

Testname: MGF1106_FINAL_REVIEW

- 1) A
- 2) D
- 3) B
- 4) D
- 5) B
- 6)

p	q	$\sim q$	$p \wedge \sim q$
T	T	F	F
T	F	T	T
F	T	F	F
F	F	T	F

- 7)

p	q	$p \vee q$	$\sim(p \vee q)$	$\sim p$	$\sim(p \vee q) \wedge \sim p$
T	T	T	F	F	F
T	F	T	F	F	F
F	T	T	F	T	F
F	F	F	T	T	T

- 8)

p	q	$\sim p$	$\sim q$	$\sim p \rightarrow \sim q$
T	T	F	F	T
T	F	F	T	T
F	T	T	F	F
F	F	T	T	T

- 9) s t $\sim s \rightarrow (\sim s \wedge t)$

s	t	$\sim s \rightarrow (\sim s \wedge t)$
T	T	T
T	F	T
F	T	T
F	F	F

- 10) B
- 11) C
- 12) D
- 13) A
- 14) A
- 15) C
- 16) B
- 17) C
- 18) B
- 19) A
- 20) B
- 21) B
- 22) C
- 23) D
- 24) C
- 25) A
- 26) C
- 27) 7

Answer Key

Testname: MGF1106_FINAL_REVIEW

- 28) D
- 29) D
- 30) B
- 31) C
- 32) B
- 33) B
- 34) B