

## Algebra 2 - 1st Test Second Semester Practice Test

Simplify.

1  $7^{\frac{1}{3}} \cdot 49^{\frac{1}{3}}$

A)  $\sqrt{7}$

B) 49

C)  $\sqrt[3]{7}$

D) 7

2  $27^{\frac{2}{3}}$

A) 3

B) 1

C) 9

D) 27

3  $a^5 \cdot 3b^9 \cdot 6a$

A)  $18a^6b^9$

B)  $10a^6b^9$

C)  $18ab^{15}$

D)  $18a^{45}b^9$

4  $(t^{-2})^6$

A)  $t^{12}$

B)  $\frac{x}{12}$

C)  $\frac{1}{t^{12}}$

D)  $\frac{1}{t^{64}}$

5  $(-5g^5h^6)^2(g^4h^2)^4$

A)  $25g^{26}h^{20}$

B)  $\frac{g^{26}h^{20}}{25}$

C)  $-25g^{26}h^{20}$

D)  $25g^{15}h^{14}$

6  $\frac{a^{-12}b^{-6}}{a^{-17}b^3}$

A)  $a^5b^9$

B)  $\frac{b^{-18}}{b^{-14}}$

C)  $\frac{a^5}{b^9}$

D)  $a^6b^{14}$

7 Write the exponential expression  $3x^{\frac{3}{8}}$  in radical form.

A)  $3\sqrt[8]{x^3}$

B)  $\sqrt[8]{3x^3}$

C)  $3\sqrt[3]{x^8}$

D)  $3^{\frac{3}{8}}\sqrt[8]{x^3}$

8 Write  $(8a^{-6})^{-\frac{2}{3}}$  in simplest form.

A)  $\frac{a^4}{4}$

B)  $4a^4$

C)  $\frac{1}{4a^4}$

D) none of these

**Solve the equation.**

9  $\sqrt{x+10} - 7 = -5$

A) 14

B) -8

C) 4

D) -6

**Suppose  $Q$  and  $R$  are independent events. Find  $P(Q \text{ and } R)$ .**

10  $P(Q) = \frac{4}{5}$ ,  $P(R) = \frac{4}{11}$

A)  $\frac{16}{55}$

B)  $\frac{4}{7}$

C)  $\frac{39}{55}$

D)  $\frac{64}{55}$

11 Two urns contain white balls and yellow balls. The first urn contains 9 white balls and 9 yellow balls and the second urn contains 8 white balls and 3 yellow balls. A ball is drawn at random from each urn. What is the probability that both balls are white?

A)  $\frac{4}{11}$

B)  $\frac{17}{29}$

C)  $\frac{1}{72}$

D)  $\frac{17}{198}$

**Suppose  $S$  and  $T$  are mutually exclusive events. Find  $P(S \text{ or } T)$ .**

12  $P(S) = \frac{1}{2}$ ,  $P(T) = \frac{1}{9}$

A)  $\frac{2}{11}$

B)  $\frac{11}{18}$

C)  $\frac{1}{18}$

D) 1

13  $P(S) = 20\%$ ,  $P(T) = 22\%$

A) 2%

B) 440%

C) 42%

D) 4.4%

14 A bag contains 6 red marbles, 4 white marbles, and 6 blue marbles. Find  $P(\text{red or blue})$ .

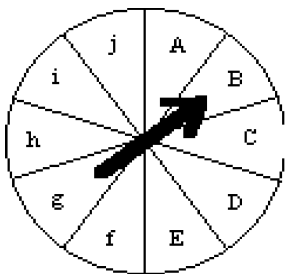
A)  $\frac{4}{5}$

B)  $\frac{3}{4}$

C)  $\frac{9}{4}$

D)  $\frac{5}{8}$

- 15 If all possible results are equally likely, what is the probability that a spin of the spinner will land on an upper case letter or a consonant?



- A) 0.9                      B) 0.7                      C) 0.5                      D) 0.3

- 16 Each person in a group of students was identified by year and asked when he or she preferred taking classes: in the morning, afternoon, or evening. The results are shown in the table. Find the probability that the student preferred morning classes given he or she is a freshman. Round to the nearest thousandth.

When Do You Prefer to Take Classes?

	Freshman	Sophomore	Junior	Senior
Morning	14	12	14	7
Afternoon	9	2	5	7
Evening	12	2	10	13

- A) 0.563                      B) 0.875                      C) 0.343                      D) 0.400

- 17 The probability that a city bus is ready for service when needed is 84%. The probability that a city bus is ready for service and has a working radio is 67%. Find the probability that a bus chosen at random has a working radio given that it is ready for service. Round to the nearest tenth of a percent.
- A) 17.0%                      B) 79.8%                      C) 83.8%                      D) 12.5%

- 18 Find the standard deviation of the data set. Round to the nearest tenth.

7, 8, 4, 10, 6, 10

- A) standard deviation = 5.2                      C) standard deviation = 12.5  
 B) standard deviation = 4.1                      D) standard deviation = 2.1

- 19 Find the variance of the data set. Round to the nearest tenth.

1, 6, 5, 15, 3, 10

- A) variance = 25.8                      C) variance = 21.6  
 B) variance = 5.6                      D) variance = 8.2



**Algebra 2 - 1st Test Second Semester Practice Test  
Answer Section**

1	ANS: D	STA: CA A2 12.0
2	ANS: C	STA: CA A2 12.0
3	ANS: A	STA: CA A1 2.0   CA A1 10.0
4	ANS: C	STA: CA A1 2.0   CA A1 10.0
5	ANS: A	STA: CA A1 2.0   CA A1 10.0
6	ANS: C	STA: CA A1 2.0   CA A1 10.0
7	ANS: A	STA: CA A2 12.0
8	ANS: A	STA: CA A2 12.0
9	ANS: D	STA: CA A2 8.0
10	ANS: A	
11	ANS: A	
12	ANS: B	
13	ANS: C	
14	ANS: B	
15	ANS: A	
16	ANS: D	
17	ANS: B	
18	ANS: D	
19	ANS: C	
20	ANS: B	STA: CA A2 19.0
21	ANS: C	STA: CA A2 19.0
22	ANS: B	
23	ANS: A	