

You are receiving this Summer Assignment now so that you can plan ahead and work on this assignment on a schedule of your own choosing that fits your plans for the summer. Some of you may, upon entering college, take a math placement exam. One standardized exam that may be offered for that purpose is the ACCUPLACER. The attached contain review questions in arithmetic and elementary algebra that may help prepare you for the math portion of the ACCUPLACER.

Your assignment for this summer is to complete the following:

- Unit One Review, #1-20
- Unit Two Review, #1-20

You may print the attached pages and write your work there, or you may write you work on separate loose-leaf. For each problem, **show all work** where appropriate. **Do not use a calculator** for any of these problems.

Bring all of your work with you on the first day that our class meets (this may be during Orientation). There will be a grade for this assignment. If you submit just a list of answers with little or no work, you will not receive credit. If there are any questions, email Mr. Sung ([esung@mercyhighschool.com](mailto:esung@mercyhighschool.com)).

# Unit One Review

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In chapters 1 through 7, we covered the material that you will see on the Arithmetic test of the ACCUPLACER. This unit review will give you the opportunity to assess your skills and pinpoint areas that you still need to work on. When you check your answers to these problems, try to identify the content areas that gave you the most trouble, and let that direct your focus of study. Good luck!

**Directions:** For each of the questions below, choose the best answer from the four choices given.

- $4.56 \times 0.25 =$ 
  - 1.14
  - 3.192
  - 18.24
  - 114
- Which of the following sets of numbers has a mean of 7 and median of 7?
  - 11, 3, 1, 13
  - 12, 4, 8, 6, 12
  - 2, 5, 7, 14
  - 5, 3, 8, 12
- 9 is 20% of what number?
  - 1.8
  - 36
  - 45
  - 180
- Which of the following is equal to  $3.91 \times 10^{-5}$ ?
  - 0.0000391
  - 0.00000391
  - 39.1
  - 195.5

5. Which of the following choices lists the fractions in order from least to greatest?

(A)  $\frac{3}{4}, \frac{11}{16}, \frac{5}{8}, \frac{1}{2}$

(B)  $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{11}{16}$

(C)  $\frac{3}{4}, \frac{5}{8}, \frac{11}{16}, \frac{1}{2}$

(D)  $\frac{1}{2}, \frac{5}{8}, \frac{11}{16}, \frac{3}{4}$

6.  $5\frac{1}{3} \div \frac{4}{9} =$

(A)  $2\frac{10}{27}$

(B) 3

(C)  $5\frac{3}{4}$

(D) 12

7.  $\frac{12}{5} =$

(A) 1.25

(B) 1.75

(C) 2.25

(D) 2.4

8. Jill planned to spend  $3\frac{1}{4}$  hours taking stock of the company's inventory. She has been working for  $1\frac{1}{2}$  hours. How many more hours does she plan to work on this task?

(A)  $1\frac{3}{4}$

(B)  $2\frac{1}{4}$

(C)  $2\frac{1}{2}$

(D)  $2\frac{3}{4}$

9.  $0.04 + 12.2 + 3.8 =$

(A) 0.1604

(B) 5.06

(C) 16.4

(D) 16.04

10. 64 is equal to all of the following EXCEPT
- (A)  $8^2$
  - (B)  $4^3$
  - (C)  $2^6$
  - (D)  $6^4$
11.  $5\sqrt{12} - 2\sqrt{27} =$
- (A)  $3\sqrt{15}$
  - (B)  $4\sqrt{15}$
  - (C)  $4\sqrt{3}$
  - (D)  $3\sqrt{3}$
12. Bob needs to buy siding for the wall of his garage. The garage wall measures 9 feet by 20 feet. How much will the siding materials cost Bob if it costs \$2.25 per square foot?
- (A) \$180
  - (B) \$360.25
  - (C) \$405
  - (D) \$911.25
13. What is  $\frac{1263}{101}$  rounded to the nearest integer?
- (A) 12
  - (B) 13
  - (C) 14
  - (D) 15
14. All incoming freshman at Schuyler College must take a class in either ethics, constitutional law, or logic. This year, half of the incoming freshman chose to take the constitutional law class, one-fifth of them chose to take the logic class, and the rest took the ethics class. What fraction of Schuyler College freshman chose to take the ethics class this year?
- (A)  $\frac{1}{5}$
  - (B)  $\frac{3}{10}$
  - (C)  $\frac{7}{10}$
  - (D)  $\frac{5}{7}$

15. All of the following are equivalent to 80% of 20 EXCEPT
- (A)  $\frac{1}{8} \times 20$
  - (B)  $0.8 \times 20$
  - (C)  $8 \times 2$
  - (D)  $\frac{4}{5} \times 20$
16. Which of the following lists the decimals in order from least to greatest?
- (A) 0.62, 0.062, 0.602, 0.26
  - (B) 0.26, 0.062, 0.62, 0.602
  - (C) 0.062, 0.26, 0.602, 0.62
  - (D) 0.062, 0.26, 0.62, 0.602
17. It has rained 55% of the last 180 days in Olympia, Washington. How many days has it rained in the last 180 days in Olympia?
- (A) 55
  - (B) 95
  - (C) 99
  - (D) 327
18. Thalia must maintain an 80 test average to keep her scholarship. On the first three exams of the year, she got a 72, a 76, and an 85. What score must she get on the fourth and final test to have at least an 80 average?
- (A)  $\geq 78$
  - (B)  $\geq 80$
  - (C)  $\geq 87$
  - (D)  $\geq 97$
19. The perimeter of a square is 22 meters. What is its area in square meters?
- (A) 11 square meters
  - (B) 30.25 square meters
  - (C) 55 square meters
  - (D) 121 square meters
20. Three out of every four workers at Lavonica Corp. wear a tie. How many employees work at Lavonica Corp. if 84 of them wear a tie?
- (A) 63
  - (B) 84
  - (C) 112
  - (D) 159

# Unit Two Review

In chapters 8 through 14, we covered the material that you will see on the Elementary Algebra test of the ACCUPLACER. This unit review will give you the opportunity to assess your skills and pinpoint areas that you still need to work on. When you check your answers to these problems, try to identify the content areas that gave you the most trouble, and let that direct your focus of study. Good luck!

**Directions:** For each of the questions below, choose the best answer from the four choices given.

1. Which of the following choices has the fractions listed in order from least to greatest?

(A)  $-\frac{3}{8}, -\frac{7}{16}, -\frac{1}{2}, -\frac{5}{8}$

(B)  $-\frac{5}{8}, -\frac{3}{8}, -\frac{7}{16}, -\frac{1}{2}$

(C)  $-\frac{5}{8}, -\frac{1}{2}, -\frac{7}{16}, -\frac{3}{8}$

(D)  $-\frac{1}{2}, -\frac{3}{8}, -\frac{5}{8}, -\frac{7}{16}$

2.  $\frac{-6}{-6-12} =$

(A)  $\frac{1}{3}$

(B)  $-3$

(C)  $3$

(D)  $-1$

3. What is the value of  $(2a)^3 \div a^2 + 4a(b-6)$  when  $a = -2$  and  $b = 3$ ?

(A)  $-8$

(B)  $8$

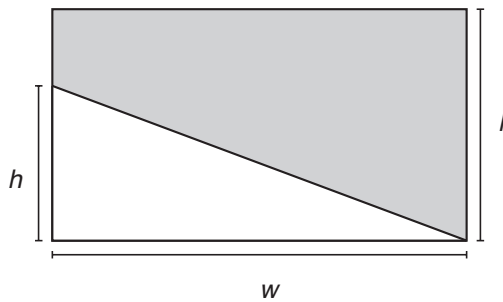
(C)  $20$

(D)  $40$

4. How many solutions  $(x, y)$  are there for the following system of equations?

$$\begin{aligned}2x - y &= 19 \\ x + y &= 5\end{aligned}$$

- (A) one solution  
(B) two solutions  
(C) infinite solutions  
(D) no solutions
5. On Saturday, Rebecca sold  $n$  newspapers, and Jordan sold 5 less than twice as many newspapers as Rebecca. The total number of newspapers sold by Jordan and Rebecca on Saturday could be represented by
- (A)  $2n$   
(B)  $2n - 5$   
(C)  $3n - 5$   
(D)  $3n - 10$
6. The image below shows a right triangle, that has a height of  $h$  units and a width of  $w$  units, inscribed within a rectangle whose sides measure  $l$  units in length and  $w$  units in width. Which of the following expressions represents the area of the shaded region?



- (A)  $l \times w \times h$   
(B)  $\frac{1}{2}(l \times w \times h)$   
(C)  $l - (h \times w)$   
(D)  $(l \times w) - \frac{1}{2}(h \times w)$
7. Of the following choices, which results in the largest value?

- (A)  $\left(-\frac{1}{2}\right)^2$   
(B)  $\left(-\frac{1}{2}\right)^3$   
(C)  $\left(-\frac{1}{2}\right)^4$   
(D)  $\left(-\frac{1}{2}\right)^5$

8. If  $a = -3$  and  $b = -8$ , then  $|a + b| =$
- (A)  $-5$   
(B)  $5$   
(C)  $-11$   
(D)  $11$
9. If the quotient  $\frac{4p^2 - 12p}{16p^2} \div \frac{2p^2 - 6p}{3p^2 + 9p}$  is simplified to lowest terms, which of the following choices is the *numerator* of the resulting expression?
- (A)  $3p + 9$   
(B)  $p + 3$   
(C)  $8p^2$   
(D)  $(p - 3)^2$
10.  $(4x^3 + 5)^2 =$
- (A)  $16x^6 + 25$   
(B)  $16x^5 + 25$   
(C)  $16x^6 + 40x^3 + 25$   
(D)  $16x^9 + 40x^3 + 25$
11. Which of the following choices is a factor of both  $x^2 - 3x - 10$  and  $x^2 - 7x + 10$ ?
- (A)  $x - 2$   
(B)  $x - 5$   
(C)  $x + 5$   
(D)  $x + 10$
12. Given that  $b$  is a whole number,  $(x + b)(x - b)$  could be equivalent to all of the following EXCEPT
- (A)  $(x^2 - 4)$   
(B)  $(x^2 - 12)$   
(C)  $(x^2 - 64)$   
(D)  $(x^2 - 100)$
13. If  $a \neq 0$ , then  $\frac{3b}{a} - \frac{3b}{2a} + \frac{b}{5a} =$
- (A)  $\frac{b}{4a}$   
(B)  $\frac{b}{5a}$   
(C)  $\frac{17b}{10a}$   
(D)  $\frac{13b}{10a}$



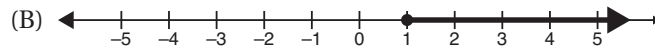
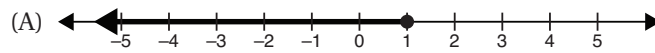
14. If  $-3(4x + 2) + 5x = 29$ , then  $x =$

- (A)  $-5$
- (B)  $5$
- (C)  $34$
- (D)  $42$

15. Solve for  $x$ :  $\frac{3}{4}x - 5 \geq 7$

- (A)  $x \geq \frac{8}{3}$
- (B)  $x \geq 9$
- (C)  $x \leq 16$
- (D)  $x \geq 16$

16. Which of the number lines below shows the solution to  $4x - 2(x + 5) \geq -8$ ?



17. Destiny has \$10 to spend on candy ( $c$ ) and a sandwich ( $s$ ). Which of the following inequalities can be used to represent how much money Destiny can spend on candy after she buys a sandwich?

- (A)  $s \leq c + 10$
- (B)  $c \leq 10 - s$
- (C)  $s \geq 10 - c$
- (D)  $c \leq 10 + s$

18. If  $x > 2$ , then  $\frac{x^2 - 3x - 10}{x^2 - 4} =$

(A)  $\frac{3x - 10}{4}$

(B)  $\frac{x - 5}{x + 2}$

(C)  $\frac{x - 5}{x - 2}$

(D)  $\frac{x - 10}{x}$

19. In the solution to the system of equations below, what is the value of  $y$ ?

$$\begin{aligned}x + y &= 16 \\2x - y &= 26\end{aligned}$$

(A) 2

(B) 6

(C) 8

(D) 14

20.  $(-2x^3)(-2x^3)(-2x^3) =$

(A)  $-6x^9$

(B)  $-8x^9$

(C)  $6x^9$

(D)  $8x^9$