

COWLEY COUNTY COMMUNITY COLLEGE  
REVIEW GUIDE

Compass Pre-Algebra - Level 1

This study guide is for students trying to test into Pre-Algebra or Beginning Algebra. There are three levels of math study guides.

1. Simplify:  $22 + (-8) + 32 - (-12) + 8$

- a.  $-2$
- b.  $54$
- c.  $28$
- d.  $66$
- e.  $45$

2. Compute:  $\frac{4}{5} + \frac{1}{8}$

- a.  $\frac{5}{13}$
- b.  $\frac{1}{10}$
- c.  $\frac{5}{40}$
- d.  $\frac{37}{40}$
- e.  $\frac{28}{40}$

3. Divide:  $\frac{5}{7} \div \frac{3}{14}$

- a.  $\frac{15}{68}$
- b.  $3\frac{1}{3}$
- c.  $\frac{3}{10}$
- d.  $1\frac{3}{7}$
- e.  $2\frac{1}{7}$

4. Simplify:  $\frac{4}{5} + \frac{5}{9} \cdot \frac{-4}{5} - \frac{4}{5}$

a.  $1 \frac{13}{35}$

b.  $\frac{-4}{9}$

c.  $\frac{8}{27}$

d. 0

e.  $1 \frac{16}{45}$

5. Jill is making bookmarks for the fund-raising sale. Each bookmark costs \$1.00 to make. If she sells the bookmarks for \$1.50 each, how many will she have to sell to make a profit of exactly \$20.00?

a. 10

b. 15

c. 20

d. 25

e. 40

6. What is the average (arithmetic mean) of 11,8,4,6,7,3 and 5?

a.  $4 \frac{6}{7}$

b.  $5 \frac{3}{4}$

c.  $6 \frac{2}{7}$

d. 6.5

e.  $7 \frac{2}{3}$

7. Simplify:  $42 + 6 \div 3 - 4$

a. 12

b. 36

c. 7

d. 40

e. 48

8. Simplify:  $\frac{3^2 - 2^3}{13 - 5}$

a.  $-\frac{1}{4}$

b.  $\frac{1}{8}$

c.  $\frac{3}{8}$

d.  $\frac{1}{4}$

e. 0

9. 70 is 35% of what number?

a. 245

b. 105

c. 200

d. 210

e. 135

10. A dress has been marked down 25% and now sells for \$27. What was the original price?

a. \$52.00

b. \$45.00

c. \$33.75

d. \$40.75

e. \$36.00

11. Nancy charged \$400 worth of purchases on her credit card. On her first bill, she was not charged any interest and she made a payment of \$100.00. She then charged another \$40.00 worth of purchases. On her second bill a month later, she was charged 4% interest on her entire unpaid balance. how much interest was Nancy charged on her second bill?

a. \$13.60

b. \$17.60

c. \$12.00

d. \$15.40

e. \$16.00

12. If three pounds of apples cost \$1.80, what is the cost of 12 pounds?
- \$21.60
  - \$15.40
  - \$7.20
  - \$12.60
  - \$5.40
13. The largest prime factor of 80 is
- 2
  - 3
  - 5
  - 8
  - 11
14. What is the least common multiple of 6, 8 and 18?
- 12
  - 18
  - 24
  - 72
  - 144
15. How many yards of material remain from a 30-yard length after two pieces, each  $2\frac{1}{2}$  yards long, and four pieces, each  $3\frac{1}{4}$  yards long, are removed?
- $5\frac{3}{4}$
  - 12
  - $12\frac{1}{4}$
  - 24
  - $24\frac{1}{4}$
16. What is the average (arithmetic mean) of 8, 12, 18, 13, 11 and 18?
- 6
  - 18
  - 16
  - $12\frac{1}{2}$
  - $13\frac{1}{3}$

17. What is the meaning of  $5^3$ ?

- a.  $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$
- b. 15
- c.  $3 \cdot 5$
- d.  $5 \cdot 5 \cdot 5$
- e.  $3/5$

18. Multiply:  $1.8 \times 8.5$

- a. 1.43
- b. 153
- c. .153
- d. 1.53
- e. 15.3

19. What is 40% of 90?

- a. 18
- b. 20
- c. 24
- d. 36
- e. 45

20. Five pieces of wire are cut from a length of wire that is 50 feet long. One of the pieces is  $12 \frac{2}{3}$  feet long. Two of the pieces are  $5 \frac{1}{4}$  feet long each. Two of the pieces are  $6 \frac{1}{2}$  feet long each. How many feet of wire are left from the original length?

- a.  $36 \frac{1}{6}$
- b.  $35 \frac{3}{5}$
- c.  $13 \frac{5}{6}$
- d.  $14 \frac{2}{5}$
- e. 14

Answers for Test 1:

1. d
2. d
3. b
4. b
5. e
6. c
7. d
8. b
9. c
10. e
11. a
12. c
13. c
14. d
15. b
16. e
17. d
18. e
19. d
20. c

Solutions for Test 1:

1. Simplify:  $22 + (-8) + 32 - (-12) + 8$

Answer: d

$$22 + (-8) + 32 - (-12) + 8$$

$$14 + 32 - (-12) + 8$$

$$14 + 32 + 12 + 8$$

$$46 + 12 + 8$$

$$58 + 8$$

$$66$$

- This problem is about signed numbers. The only way to get the wrong answer is by adding wrong. Do the problem several times before you select your answer.

2. Compute:  $\frac{4}{5} + \frac{1}{8}$

Answer: d

$$\frac{4}{5} + \frac{1}{8} = \frac{4}{5} \left( \frac{8}{8} \right) + \frac{1}{8} \left( \frac{5}{5} \right) = \frac{32}{40} + \frac{5}{40} = \frac{37}{40}$$

➤ Note that some of the distracters (incorrect answers) do not even have the common denominator.

3. Divide:  $\frac{5}{7} \div \frac{3}{14}$

Answer: b

$$\frac{5}{7} \div \frac{3}{14} = \frac{5}{7} \cdot \frac{14}{3} = \frac{5}{1} \cdot \frac{2}{3} = \frac{10}{3} = 3\frac{1}{3}$$

4. Simplify:  $\frac{4}{5} + \frac{5}{9} \cdot \frac{-4}{5} - \frac{4}{5}$

Answer: b

$$\frac{4}{5} + \frac{5}{9} \cdot \frac{-4}{5} - \frac{4}{5}$$

$$\frac{4}{5} - \frac{4}{9} - \frac{4}{5}$$

$$\frac{4}{5} \cdot \frac{9}{9} - \frac{4}{9} \cdot \frac{5}{5} - \frac{4}{5} \cdot \frac{9}{9}$$

$$\frac{36}{45} - \frac{20}{45} - \frac{36}{45}$$

$$\frac{-20}{45}$$

$$\frac{-4}{9}$$

➤ The problem is easier if you notice that  $\frac{4}{5}$  and  $\frac{-4}{5}$  add to 0.

5. Jill is making bookmarks for the fund raising sale. Each bookmark costs \$1.00 to make. If she sells the bookmarks for \$1.50 each, how many will she have to sell to make a profit of exactly \$20.00?

Answer: e

Jill is making \$.50 profit per bookmark.

$$\text{Divide: } \frac{20}{.50} = 40$$

6. What is the average (arithmetic mean) of 11,8,4,6,7,3 and 5?

Answer: c

$$\text{Divide: } \frac{11+8+4+6+7+3+5}{7} = 6\frac{2}{7}$$

7. Simplify:  $42 + 6 \div 3 - 4$

Answer: d

$$42 + 6 \div 3 - 4$$

$$42 + 2 - 4$$

$$44 - 4$$

$$40$$

➤ Order operations.

8. Simplify:  $\frac{3^2 - 2^3}{13 - 5}$

Answer: b

$$\frac{3^2 - 2^3}{13 - 5} = \frac{9 - 8}{13 - 5} = \frac{1}{8}$$

➤ Exponents come first.

9. 70 is 35% of what number?

Answer: c

$$70 = 35\% \text{ of } x$$

$$70 = 0.35(x)$$

$$\frac{70}{.35} = x$$

$$x = 200$$

10. Answer: e

If a dress has been marked down 25%, that means the current selling price is 75% of the original.

In other words, \$27.00 is 75% of what?

$$27.00 = 75\% \text{ of } x$$

$$27 = 0.75 (x)$$

$$x = \$36.00$$

11. Answer: a

$$400 - 100 = 300 \text{ (1}^{\text{st}} \text{ month purchases)} - \text{payment} = \text{balance after 1}^{\text{st}} \text{ month.}$$

$$300 + 40 = 340 \text{ (balance brought forward) + (new purchases) = unpaid balance}$$

$$340 (0.04) = 13.60 \text{ (unpaid balance)} \cdot 4\% = \text{interest}$$

12. Answer: c

$$\frac{\$1.80}{3} = \$0.60. \text{ Each pound costs } \$0.60.$$

$$12 \text{ pounds would cost } \$7.20 (\$0.60 \times 12)$$

13. The largest prime factor of 80 is

Answer c

➤ The factors of 80 are: 1,2,5,10,20,40,and 80. Therefore the largest prime factor of 80 is 5.

14. What is the least common multiple of 6, 8, and 18?

Answer: d

➤ Process of elimination starting with smallest choice. 8 will not divide into 12 or 18. 18 will not divide into 24.

15. How many yards of material remain from a 30-yard length after two pieces, each  $2\frac{1}{2}$  yards long. And four pieces each  $3\frac{1}{4}$  yards long, are removed?

Answer: b

$$30 - 2(2\frac{1}{2}) - 4(3\frac{1}{4}) = 30 - 5 - 13 = 25 - 13 = 12$$

16. What is the average (arithmetic mean) of 8, 12, 18, 13, 11 and 18?

Answer: e

$$\frac{8+12+18+13+11+18}{6} = \frac{80}{6} = 13 \frac{1}{3}$$

➤ b is the mode. d is the median.

17. What is the meaning of  $5^3$ ?

Answer: d

$$5 \bullet 5 \bullet 5$$

➤ Repeat 5 three times as a factor.

18. Multiply  $1.8 \times 8.5$

Answer: e

➤ Count the number of decimals behind the point.

➤ If you multiply by a number bigger than 1, 1.8 in this case, you must get a number bigger than what you started with. B and e are the only possibilities.

19. What is 40% of 90?

Answer: d

$$40\% \text{ is } .40$$

$$.40 \times 90 = 36$$

20. Five pieces of wire are cut from a length of wire that is 50 feet long. One of the pieces is  $12 \frac{2}{3}$  feet long. Two of the pieces are  $5 \frac{1}{4}$  feet long each. Two of the pieces are  $6 \frac{1}{2}$  feet long each. How many feet of wire are left from the original length?

Answer: c

$$50 - (12 \frac{2}{3}) - 2(5 \frac{1}{4}) - 2(6 \frac{1}{2}) = 13 \frac{5}{6}$$

This study guide has been created to give students the opportunity to review concepts covered on the assessment test. This has been prepared as a general study guide and in no way represents every question you will have on the assessment.