

MAT.0650 - ELEMENTARY ALGEBRA

CHAPTER 0 (Aug, 25)

- Section 0.1

1. List the factors of each of the following numbers.

6, 21, 32

2. For the following numbers

0, 1, 2, 15, 19, 23, 27, 33, 37, 51, 53, 59, 87, 91, 97, 103, 105

- (a) Which of the given numbers are prime?
 - (b) Which of the given numbers are composite?
3. Find the prime factorization of each number.

22, 24, 32, 35, 63, 100, 132

4. Find two integers a and b that satisfy the conditions.

- (a) $ab = 24$, $a + b = 10$
- (b) $ab = 15$, $a - b = 2$
- (c) $ab = 30$, $a + b = 11$
- (d) $ab = 28$, $a - b = 3$

5. Find the **Greatest Common Factor** (GCF).

- (a) 6 and 9
- (b) 12 and 30
- (c) 36 and 54

6. Find the **Least Common Multiple** (LCM).

- (a) 10 and 21
- (b) 6 and 12
- (c) 18 and 24
- (d) 12 and 18

- Section 0.2

1. Write three equivalent fraction of each number.

$\frac{5}{11}$, $\frac{3}{4}$, $\frac{2}{7}$

2. Write the following fractions in the simplest form.

$\frac{24}{64}$, $\frac{30}{54}$

- Section 0.3

1. Perform the indicated operations, and express the final answer in the simplest form.

- (a) $\frac{10}{27} \cdot \frac{9}{20}$
- (b) $\frac{7}{15} \div \frac{14}{25}$
- (c) $\frac{5}{13} + \frac{6}{13}$
- (d) $\frac{5}{6} + \frac{11}{18}$
- (e) $\frac{7}{18} + \frac{5}{12}$

- (f) $\frac{11}{15} - \frac{4}{5}$
- (g) $\frac{11}{27} - \frac{5}{18}$
- (h) $5.204 + 3.21$
- (i) $10.23 - 5.684$
- (j) $3.05 \cdot 2.4$
- (k) $2\frac{5}{7} + 2\frac{4}{7}$
- (l) $7\frac{1}{9} - 3\frac{7}{9}$
- (m) $3\frac{2}{5} \cdot \frac{5}{8}$
- (n) $3\frac{3}{8} \div 2\frac{1}{4}$

2. Perform the following division and round the answer to the nearest tenth.

- (a) $3027 \div 27$
- (b) $25.4 \div 3.1$

3. Write the percent as a fraction.

20%, 150%, 400%

4. Write the percents as decimals.

82%, 4%, 0.52%, 225%

5. Write as percents.

0.08, 2.5, 0.005, $\frac{2}{5}$, $1\frac{1}{4}$

6. Alex's monthly rent is \$82.30. How much will he pay for electricity over a full year?

7. A project is to repair a railroad of the length 360 miles. On the first month, a quarter of the railroad length is finished. On the second month, $95\frac{1}{2}$ miles is finished. How much is left to finish the entire project?

• Section 0.4

1. Evaluate.

- (a) $18 - 3 \cdot 4$
- (b) $5 \cdot (12 - 7)$
- (c) $2 \cdot 3^2$
- (d) $(2 \cdot 3)^2$
- (e) $5 \cdot 4 - 3^2$
- (f) $3 \cdot (4 - 1)^2$
- (g) $12 + 3 \cdot 2 - 2 \cdot 3^2$
- (h) $8 \div 4 \cdot 2$
- (i) $6 \div (12 \cdot 4)$
- (j) $3^2 - 2 \cdot \frac{10-3^2}{4-(1+1)}$

• Section 0.5

1. Represent the followings integers in the number line.

6, -5, 0, 3, -2

2. Place each of the following in ascending order.

- (a) 4, -3, 0, 12, -5, -11
- (b) 2, 4, -8, 0, 10, -12, 17

3. Determine the maximum and minimum of each data set.

- (a) 4, -3, 0, 12, -5, -11

(b) 2, 4, -8, 0, 10, -12, 17

4. Find the **Additive Inverse**, a.k.a. opposite, of each number

18, 2, -3, -9, 0

5. Evaluate.

(a) $|9|$

(b) $|-7|$

(c) $|0|$

(d) $-|-5|$

(e) $|-4| + |-6|$

(f) $|-8| - |-2|$

6. At the beginning of the month, Tyler has \$112.30 in his checking account. He deposited his \$120.67 paycheck and paid his \$202.52 student loan. What is the balance in his checking account?