Name _____   Date_____

Writing and Evaluating Expressions—Multiplication and Addition

Krystal Klear Cell Phone Company charges $5.00 per month for service. The company also charges $0.10 for each text message sent.

    a.   Complete the table below to calculate the monthly charges for various numbers of text messages sent.

Number of Text Messages Sent (T)	Total Monthly Bill in Dollars
0	
10	
20	
30	
T	

    b.   If Suzannah's budget limit is $10 per month, how many text messages can she send in one month?

1. Compact discs (CDs) cost $12 each at the Music Emporium. The company charges $4.50 for shipping and handling, regardless of how many compact discs are purchased.

   a. Create a table of values that show the relationship between the number of compact discs that Mickey buys, D, and the amount of money Mickey spends, C, in dollars.

Number of CDs Mickey Buys (D)	Total Cost in Dollars (C)
1	
2	
3	

   b. If you know how many CDs Mickey orders, can you determine how much money he spends? Write the corresponding expression.

   c. Use your expression to determine how much Mickey spent buying 8 CDs.

2. Mr. Gee's class orders paperback books from a book club. The books cost $2.95 each. Shipping charges are set at $4.00, regardless of the number of books purchased.

   a. Create a table of values that show the relationship between the number of books that Mr. Gee's class buys, B, and the amount of money they spend, C, in dollars.

Number of Books Ordered (B)	Amount of Money Spent in Dollars (C)
1	
2	
3	

   b. If you know how many books Mr. Gee's class orders, can you determine how much money they spend? Write the corresponding expression.

   c. Use your expression to determine how much Mr. Gee's class spent buying 24 books.

3. Sarah is saving money to take a trip to Oregon. She received $450 in graduation gifts and saves $120 per week working.

   a. Write an expression that shows how much money Sarah has after working W weeks.

   b. Create a table that shows the relationship between the amount of money Sarah has (M) and the number of weeks she works (W).

Amount of Money Sarah Has (M)	Number of Weeks Worked (W)
	1
	2
	3
	4
	5
	6
	7
	8

   c. The trip will cost $1,200. How many weeks will Sarah have to work to earn enough for the trip?

4. Mr. Gee's Language Arts class keeps track of how many words per minute are read aloud by each of the students. They collect this Oral Reading Fluency data each month. Below is the data they collected for one student in the first four months of school.

   a. Assume this increase in Oral Reading Fluency continues throughout the rest of the school year. Complete the table to project the reading rate for this student for the rest of the year.

Month	Number of Words Read Aloud in One Minute
September	126
October	131
November	136
December	141
January	
February	
March	
April	
May	
June	

   b. If this increase in Oral Reading Fluency continues throughout the rest of the school year, when would this student achieve the goal of reading 165 words per minute?

   c. The expression for this student's Oral Reading Fluency is $121 + 5m$, where m represents the number of months during the school year. Use this expression to determine how many words per minute the student would read after 12 months of instructions.

5. When corn seeds germinate, they tend to grow 5 inches in the first week, then 3 inches per week for the remainder of the season. The relationship between height (H) and number of weeks since germination (W) is shown below.

   a. Complete the missing values in the table.

Number of Weeks Since Germination (W)	Height of Corn Plant (H)
1	5
2	8
3	11
4	14
5	
6	

   b. The expression for this height is $2 + 3W$. How tall will the corn plant be after 15 weeks of growth?

6. The Honeymoon Charter Fishing Boat Company only allows newlywed couples on their sunrise trips. There is a captain, a first mate, and a deck hand manning the boat on these trips.

   a. Write an expression that shows the number of people on the boat when there are C couples booked for the trip.

   b. If the boat can hold a maximum of 20 people, how many couples can go on the sunrise fishing trip?

Krystal Klear Cell Phone Company charges $5.00 per month for service. The company also charges $0.10 for each text message sent.

    a.   Complete the table below to calculate the monthly charges for various numbers of text messages sent.

Number of Text Messages Sent (T)	Total Monthly Bill in Dollars
0	5
10	6
20	7
30	8
T	$0.1T + 5$

    b.   If Suzannah's budget limit is $10 per month, how many text messages can she send in one month?

        Suzannah can send 50 *text messages in one month for* $10.

1.   Compact discs (CDs) cost $12 each at the Music Emporium. The company charges $4.50 for shipping and handling, regardless of how many compact discs are purchased.

    a.   Create a table of values that shows the relationship between the number of compact discs that Mickey buys, D, and the amount of money Mickey spends, C, in dollars.

Number of CDs Mickey Buys (D)	Total Cost in Dollars (C)
1	$16.50
2	$28.50
3	$40.50

    b.   If you know how many CDs Mickey orders, can you determine how much money he spends? Write the corresponding expression.

$$12D + 4.5$$

    c.   Use your expression to determine how much Mickey spent buying 8 CDs.

        $8(12) + 4.50 = 100.50.$ *Mickey spent* $100.50.

2.   Mr. Gee's class orders paperback books from a book club. The books cost $2.95 each. Shipping charges are set at $4.00, regardless of the number of books purchased.

    a.   Create a table of values that shows the relationship between the number of books that Mr. Gee's class buys, B, and the amount of money they spend, C, in dollars.

Number of Books Ordered(B)	Amount of Money Spent in Dollars (C)
1	6.95
2	9.90
3	12.85

b. If you know how many books Mr. Gee's class orders, can you determine how much money they spend? Write the corresponding expression.

$2.95B + 4$

c. Use your expression to determine how much Mr. Gee's class spent buying 24 books.

$24(2.95) + 4 = 74$. *Mr. Gee's class spent* $74.80.

3. Sarah is saving money to take a trip to Oregon. She received $450 in graduation gifts and saves $120 per week working.

a. Write an expression that shows how much money Sarah has after working W weeks.

$$450 + 120W$$

b. Create a table that shows the relationship between the amount of money Sarah has (M) and the number of weeks she works (W).

Amount of Money Sarah Has (M)	Number of Weeks Worked (W)
570	1
690	2
810	3
930	4
1050	5
1170	6
1290	7
1410	8

c. The trip will cost $1,200. How many weeks will Sarah have to work to earn enough for the trip?

Sarah will have to work 7 weeks to earn enough for the trip.

4. Mr. Gee's Language Arts class keeps track of how many words per minute are read aloud by each of the students. They collect this Oral Reading Fluency data each month. Below is the data they collected for one student in the first four months of school.

   a. Assume this increase in Oral Reading Fluency continues throughout the rest of the school year. Complete the table to project the reading rate for this student for the rest of the year.

Month	Number of Words Read Aloud in One Minute
September	126
October	131
November	136
December	141
January	146
February	151
March	156
April	161
May	166
June	171

   b. If this increase in Oral Reading Fluency continues throughout the rest of the school year, when would this student achieve the goal of reading 165 words per minute?

   The student will meet the goal in May.

   c. The expression for this student's Oral Reading Fluency is $121 + 5m$, where m represents the number of months during the school year. Use this expression to determine how many words per minute the student would read after 12 months of instruction.

   The student would read 181 words per minute: $121 + 5 \times 12$.

5. When corn seeds germinate, they tend to grow 5 inches in the first week, then 3 inches per week for the remainder of the season. The relationship between height (H) and number of weeks since germination (W) is shown below.

   a. Complete the missing values in the table.

Number of Weeks Since Germination (W)	Height of Corn Plant (H)
1	5
2	8
3	11
4	14
5	17
6	20

   b. The expression for this height is $2 + 3W$. How tall will the corn plant be after 15 weeks of growth?

   $2 + 3(15) = 47$. *The plant will be 47 inches tall.*

6. The Honeymoon Charter Fishing Boat Company only allows newlywed couples on their sunrise trips. There is a captain, a first mate, and a deck hand manning the boat on these trips.

   a. Write an expression that shows the number of people on the boat when there are C couples booked for the trip.

   $$3 + 2C$$

   b. If the boat can hold a maximum of 20 people, how many couples can go on the sunrise fishing trip?

   Eight couples (16 passengers) can fit along with the 3 crew members, totaling 19 people on the boat. A ninth couple would overload the boat.