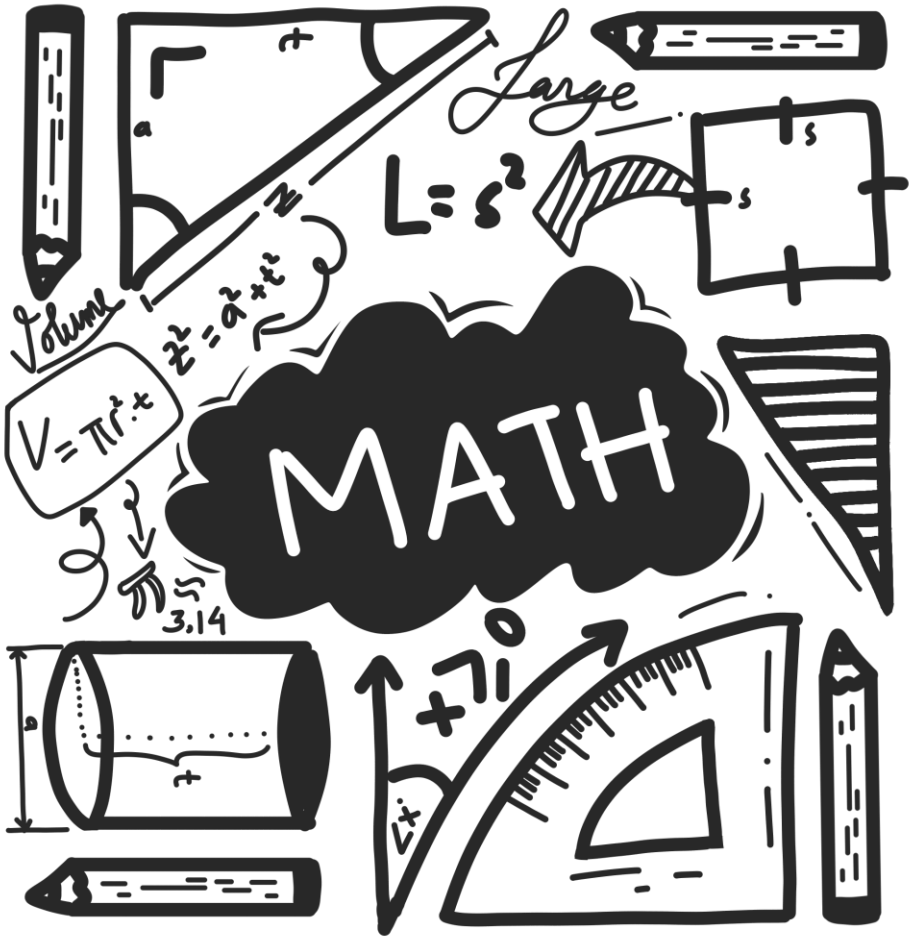
Mathematics

EoT2-Coverae-Grade 6-General

2023-2024



Name:

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M5L1 – Powers and Exponents	Exercise (1-6)	Page 267

Write each product using an exponent. (Examples 1 and 2)

1. $4 \times 4 \times 4$

2. $3 \times 3 \times 3 \times 3 \times 3$

3. $15 \times 15 \times 15 \times 15$

4. $\frac{3}{4} \times \frac{3}{4} \times \frac{3}{4} \times \frac{3}{4} \times \frac{3}{4} \times \frac{3}{4}$

5. $\frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3}$

6. 1.625×1.625

M5L2 – Numerical Expressions	Exercise (1-10)	Page 275

Evaluate each expression. (Examples 1 and 2)

1. $64 \div (15 - 7) \times 2 - 9$

2. $9 + 8 \times 3 - (5 \times 2)$

3. $4 \times (5^2 - 12) - 6$

4. $78 - 2^4 \div (14 - 6) \times 2$

5. $9 + 7 \times (15 + 3) \div 3^2$

6. $13 + (4^3 \div 2) \times 5 - 17$

7. $4 + \left(6^2 \div \frac{1}{4}\right) \times 3$

8. $12 + \left(2^3 \div \frac{2}{3}\right) - 2$

9. $36 \div \left(3^2 \div \frac{3}{4}\right) - 2.4$

10. $80 \div \left(4^2 \div \frac{2}{5}\right) + 3.75$

M5L3 – Write Algebraic Expressions	Exercise (1-3)	Page 285

Identify the terms, like terms, coefficients, and constants in each expression. (Example 1)

1. $4e + 7e + 5 + 2e$

2. $5a + 2 + 7 + 6a$

3. $4 + 4y + y + 3$

M5L4 – Evaluate Algebraic Expressions	Exercise (1-9)	Page 293

Evaluate each expression when $x = \frac{3}{4}$ and $y = 2.5$. (Example 1)

1. $8x$

2. y^2

3. $\frac{10}{y}$

Evaluate each expression when $a = \frac{2}{3}$, $b = \frac{4}{5}$, and $c = 6$. Write in simplest form. (Example 2)

4. $a + b$

5. $c - b$

6. $b - a$

Evaluate each expression when $a = 4$, $b = 3$, and $c = \frac{1}{3}$. (Example 3)

7. $(3a + 18c) \div b^2$

8. $(a^2 + 12c) \div (7b - 1)$

9. $(2b + 3a)(c^2)$

M5L5 – Factors and Multiples	Exercise (1-6)	Page 303

Use any method to find the greatest common factor of each pair of numbers. (Examples 1 and 2)

1. 12, 30

2. 4, 16

3. 9, 36

4. 35, 63

5. 42, 56

6. 54, 81

M5L6 – Use the Distributive Property	Exercise (1-12)	Page 313

Use the Distributive Property to expand each algebraic expression. (Example 1)

1. $3(x + 8)$

2. $5(6 + x)$

3. $9(3 + x)$

Use the GCF to factor each numerical expression. (Example 3)

7. $16 + 48$

8. $35 + 63$

9. $26 + 39$

Use the GCF to factor each algebraic expression. (Example 4)

10. $8x + 16$

11. $24 + 6x$

12. $42 + 7x$

M5L7 – Equivalent Algebraic Expressions	Exercise (5-10)	Page 327

Simplify each expression. (Examples 4 and 5)

5. $3x + 4 + 5x - 1$

6. $10 + 7x - 5 + 4x$

7. $4x^2 + 6x + 8 + x + 2$

8. $\frac{1}{2}x^2 + x + \frac{1}{2} + 2x + \frac{1}{2}x^2$

9. Simplify $\frac{3}{4} + \frac{2}{3}(9x + 6) + 4x + 3\frac{1}{4}$.

10. Multiselect Which of the following are equivalent to $\frac{3}{4}(8x^2 + 1) + 3x^2 + \frac{1}{4}$? Select all that apply.

- ☐ $6x^2 + \frac{3}{4} + 3x^2 + \frac{1}{4}$
- ☐ $6x^2 + 1 + 3x^2 + \frac{1}{4}$
- ☐ $9x^2 + 1\frac{1}{4}$
- ☐ $9x^2 + \frac{3}{4} + \frac{1}{4}$
- ☐ $9x^2 + 2$
- ☐ $9x^2 + 1$

M5L7 – Equivalent Algebraic Expressions	Exercise (1-4)	Page 327

Use properties of operations to determine whether or not the expressions are equivalent. (Example 1)

1. $(x + 10) + x + 9$ and $2(x + 7) + 5$

2. $0.5x + 1$ and $1(0.5x)$

Use substitution to determine whether or not the expressions are equivalent. (Examples 2 and 3)

3. $3x + 2x + x$ and $7x$

4. $x^2 + 1$ and $\frac{2}{3}x^2 + \frac{1}{3}x^2 + 1 + x$

M5L5 – Factors and Multiples	Exercise (7-10)	Page 303

7. On every fourth visit to the hair salon, Margot receives a discount of $5. On every tenth visit, she receives a free hair product. After how many visits will Margot receive the discount and a free product at the same time? (Example 3)

8. The table shows the city bus schedule for certain bus lines. Both buses are at the bus stop right now. In how many minutes will both buses be at the bus stop again? (Example 3)

Bus Line	Arrives at the bus stop every...
A	25 minutes
B	15 minutes

Use any method to find the least common multiple of each pair of numbers. (Example 4)

9. 4, 6

10. 3, 5

M6L1 – Use Substitution to Solve One-Step	Exercise (5-8)	Page 339

5. $4.5x = 18$; 3, 4, 5

6. $2.25c = 27$; 12, 13, 14

7. $d \div 5.5 = 4$; 22, 23, 24

8. $36.3 \div y = 12.1$; 2, 3, 4

M6L2 – One-Step Addition Equations	Exercise (5-10)	Page 349

Solve each equation. Check your solution. (Examples 2 and 3)

5. $9 = 3 + a$

6. $5 + x = 10$

7. $3\frac{1}{4} + z = 6\frac{3}{4}$

8. $9\frac{1}{2} = b + 2\frac{1}{4}$

9. $18.35 = c + 5.1$

Solve $x + 5.15 = 23.85$.

Solve each equation. Check your solution. (Examples 2 and 3)

5. $24 = x - 5$

6. $z - 7 = 19$

7. $z - 9\frac{1}{3} = 1\frac{5}{9}$

8. $5\frac{1}{2} = b - 12\frac{1}{4}$

9. $67.9 = c - 4.45$

10. Equation Editor Solve $x - 7.49 = 87.3$.

14. Find the Error A student is solving the equation $x - 3.2 = 5.5$. Find the student's mistake and correct it.

$$\begin{array}{rcl} x - 3.2 & = & 5.5 \\ -3.2 & & -3.2 \\ \hline x & = & 2.3 \end{array}$$

M6L4 – One-Step Multiplication Equations	Exercise (1-4)	Page 367

1. Maribel and some friends went to an adventure park. The total cost of their tickets was $374 and each person paid $46.75. Write a multiplication equation that can be used to find how many people bought tickets to the adventure park. **(Example 1)**

2. It takes Samuel $\frac{1}{5}$ hour to walk a mile. Yesterday, Samuel walked for $1\frac{1}{2}$ hours. Write a multiplication equation that can be used to find the number of miles Samuel walked. **(Example 1)**

3. The distance around a lake is 2.6 miles. On Saturday, Doug biked a total of 18.2 miles around the lake. Write a multiplication equation that can be used to find how many times Doug biked around the lake. **(Example 1)**

4. An express delivery company charges $3.25 per pound to mail a package. Georgia paid $9.75 to mail a package. Write a multiplication equation that can be used to find the weight of the package in pounds. **(Example 1)**

M6L6 – Inequalities	Exercise (7-10)	Page 389

7. Which of the following are solutions of the inequality $t + 7 \leq 12$: 4, 5, 6? **(Example 4)**

8. Which of the following are solutions of the inequality $h - 4 > 9$: 12, 13, 14? **(Example 4)**

9. Which of the following are solutions of the inequality $8r \geq 1.8$: $\frac{1}{5}, \frac{1}{4}, \frac{1}{3}$? **(Example 5)**

10. Which of the following are solutions of the inequality $\frac{2.4}{n} < 6$: 0.25, 0.4, 0.5? **(Example 5)**

M5L3 – Write Algebraic Expressions	Exercise (1-3)	Page 285

For each verbal phrase, define a variable to represent the unknown quantity. Then write the phrase as an algebraic expression. (Examples 2–4)

4. three more pancakes than Hector ate

5. twelve fewer questions than were on the first test

6. two and one-half times the number of minutes spent exercising

7. one-third the number of yards

8. four less than seven times Lynn's age

9. $2.50 more than one-fourth the cost of a pizza

M6L5 – One-Step Division Equations	Exercise (5-10)	Page 375

Solve each equation. Check your solution. (Examples 2 and 3)

5. $6 = \frac{j}{8}$

6. $\frac{k}{7} = 7$

7. $\frac{z}{4} = \frac{2}{3}$

8. $\frac{1}{2} = \frac{w}{8}$

9. $5.31 = \frac{p}{9.2}$

10. Equation Editor Solve $\frac{x}{1.3} = 1.94$.

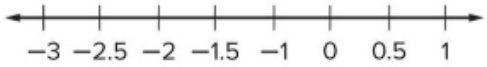
M6L6 – Inequalities	Exercise (1-6)	Page 389

1. The minimum deposit for a new checking account is $75. Write an inequality to represent the amounts in dollars a that could be deposited in a new checking account. (Example 1)

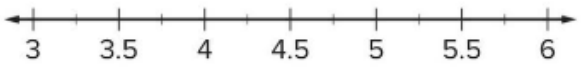
2. To win a medal in a 5K race, a runner's time must be less than 22 minutes. Write an inequality to represent the times in minutes m that would win a medal. (Example 1)

Graph each inequality on the number line. (Examples 2 and 3)

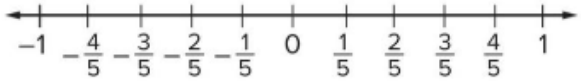
3. $b < -1.5$



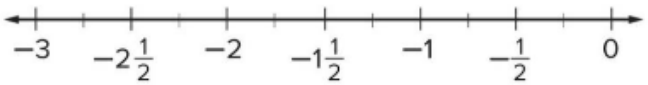
4. $d \geq 4.75$



5. $a > \frac{4}{5}$



6. $d \leq -2\frac{1}{4}$



M7L1 – Relationships Between Two Variables	Exercise (1-6)	Page 403

1. Sadie ordered a pizza and had it delivered. The delivery fee is $3.50. The total cost c is equal to the cost of her pizza p plus $3.50. The rule is $p + 3.50$. Complete the table using the rule to find the total cost if her pizza costs $9.75, $12.00, or $14.50. (Example 1)

Input, Cost of Pizza ($), p	Rule $p + 3.50$	Output, Total Cost ($), c
9.75		
12.00		
14.50		

2. Joshua has a coupon for $1.50 off his purchase at the souvenir shop. The total cost c is equal to the cost of his purchase p minus $1.50. The rule is $p - 1.50$. Complete the table using the rule to find the total cost if his purchase is $5.67, $8.34, or $11.97. (Example 1)

Input, Cost of Purchase ($), p	Rule $p - 1.50$	Output, Total Cost ($), c
5.67		
8.34		
11.97		

3. Miranda has a coupon for $0.75 off any salad at a restaurant. The total cost c is equal to the cost of her salad s minus $0.75. The rule is $s - 0.75$. Complete the table using the rule to find the total cost if her salad costs $2.79, $3.55, or $4.25. (Example 1)

Input, Cost of Salad ($), s	Rule $s - 0.75$	Output, Total Cost ($), c
2.79		
3.55		
4.25		

4. Avery is buying material by the yard to make bags. The material costs $4.98 per yard. The total cost c of y yards is equal to 4.98 times y. Complete the table to find the number of yards Avery purchased if the total cost is $14.94, $29.88, or $44.82. (Example 2)

Input, Number of Yards, y	Rule $4.98y$	Output, Total Cost ($), c
		14.94
		29.88
		44.82

5. Each pie at a bakery costs $9.50. The total cost c of p pies is equal to 9.50 times p. Complete the table to find the number of pies purchased if the total cost is $19.00, $28.50, or $47.50. (Example 2)

Input, Number of Pies, p	Rule $9.50p$	Output, Total Cost ($), c
		19.00
		28.50
		47.50

6. Table Item Anthony is buying plants for his garden. Each plant costs $0.95. The total cost c of p plants is equal to 0.95 times p. Complete the table to find the number of plants Anthony purchased if the total cost is $7.60, $11.40, or $15.20.

Input, Number of Plants, p	Rule $0.95p$	Output, Total Cost ($), c
		7.60
		11.40
		15.20

1. The table shows the total cost c of buying t movie tickets. Write an equation to represent the relationship between c and t. (Example 1)

Number of Tickets, t	Total Cost ($), c
1	7
2	14
3	21
4	28

2. The table shows the total number of pencils p in b boxes. Write an equation to represent the relationship between p and b. (Example 1)

Number of Boxes, b	Total Number of Pencils, p
1	12
2	24
3	36
4	48

3. The table shows the total cost of bowling any number of games and renting bowling shoes. Write a two-step equation to represent the total cost c for bowling g games. (Example 2)

Number of Games, g	Total Cost ($), c
1	6
2	10
3	14
4	18

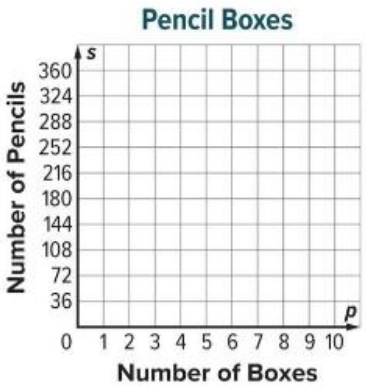
4. The table shows the total cost of renting a canoe based on the number of hours and a one-time rental fee. Write a two-step equation to represent the total cost c of renting a canoe for h hours. (Example 2)

Number of Hours, h	Total Cost ($), c
1	16
2	27
3	38
4	49

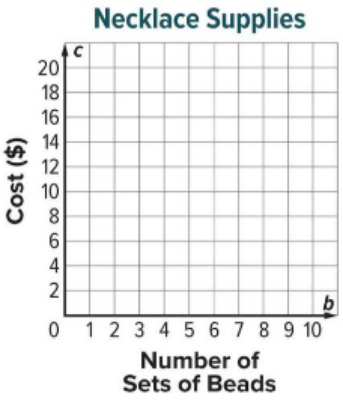
5. Open Response The table shows the total cost of belonging to a fitness center based on the number of months and a one-time registration fee. Write a two-step equation to represent the total cost c for belonging to the fitness center for m months.

Number of Months, m	Total Cost ($), c
1	25
2	40
3	55
4	70

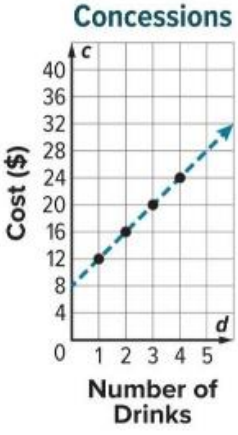
1. The equation $p = 144b$ represents the number of pencils p in b boxes. Graph the relationship on the coordinate plane. (Example 1)



2. The equation $c = 2b + 6$ represents the total cost c of b sets of beads and one necklace string. Graph the relationship on the coordinate plane. (Example 1)



3. The graph shows the total cost c of buying one large bucket of popcorn and d large drinks. Write an equation from the graph that could be used to find the total cost c if you buy one large bucket of popcorn and d large drinks. (Example 2)



4. Open Response The graph shows the total cost c of buying one parking pass and t tickets to a concert. Write an equation from the graph that could be used to find the total cost c if you buy one parking pass and t tickets to a concert. (Example 2)