

Chapter 1.1 Review**Short Answer**

Translate each phrase into an algebraic expression.

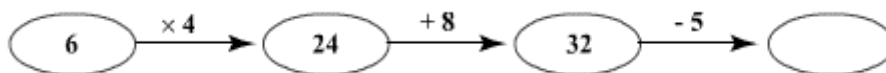
1. four inches less than Kimi
2. the quotient of a number and nine, minus three
3. eleven increased by the difference of twenty and a number
4. Laura's allowance plus a \$5 bonus
5. seven times a number, decreased by ten
6. twelve more than a number times three
7. two less than a number divided by four
8. the quotient of thirty and three times a number
9. the difference of nine and twice a number
10. five times the product of a number and thirteen

Find the value of each expression.

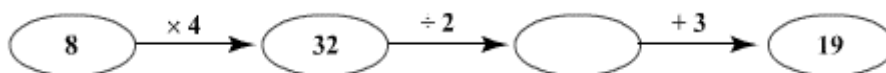
11. $6(6) - (12 - 3)$
12. $5[(46 - 14) \div 4]$
13. Maria bought N chocolates. Mike bought eight times as many chocolates as Maria. Write an expression to show how many chocolates Mike bought.
14. Tom has N stamps in his collection. His friend Mike has twice the number of stamps than Tom. Mike gives 50 stamps to Tom. Write an expression for the number of stamps that are left with Mike.
15. The distance from Sandra's house to the school is D miles. Ronald's house is 5 miles further from Sandra's house. Write an expression to find the distance between Ronald's house and the school.

16. Tony weighs T pounds. Tony's father Jim weighs 4 pounds less than twice the weight of Tony. Write an expression to represent Jim's weight.
17. There are N dozens of oranges and 8 apples in a basket. Write an expression to represent the total number of fruits in the basket.
18. Michael spends F cents on snacks each weekday. He starts each week with \$8. Write an expression for the amount, in cents, Michael spends on snacks by Thursday.
19. Diana joined a course in June. The total fee of the course is \$6,000. Diana pays $\$M$ every month for the course fee. Write an expression for the remaining course fee that Diana has to pay at the end of October.
20. There are 100 cartons in a container. Each carton weighs W pounds. The weight of the container with the cartons is 3,000 pounds. Write an expression that represents the weight of the container after removing all the cartons.
21. In a long distance race, Carol took T hours to cover a distance of 28 miles. Sarah covered the same distance in half the time Carol took plus 30 minutes. Write an expression to find the time taken by Sarah in hours to complete the race.
22. Monica bought N gifts where each gift costs \$5. Write an expression for the total cost of the gifts. Find the total cost of the gift for $N = 5$.

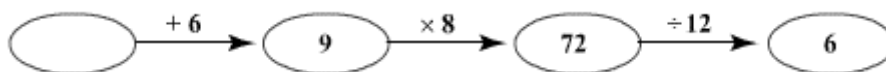
23. Complete the flowchart by filling the empty oval.



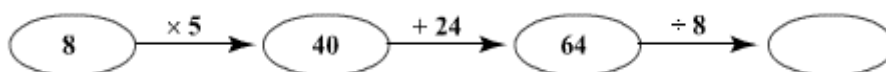
24. Complete the flowchart by filling the empty oval.



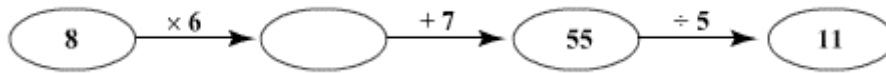
25. Complete the flowchart by filling the empty oval.



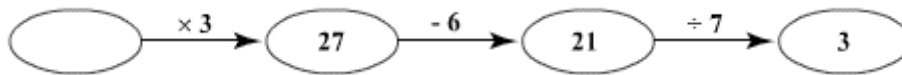
26. Complete the flowchart by filling the empty oval.



27. Complete the flowchart by filling the empty oval.



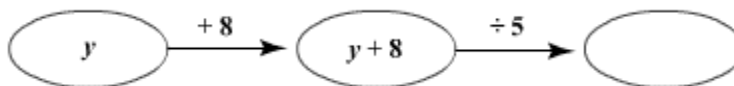
28. Complete the flowchart by filling the empty oval.



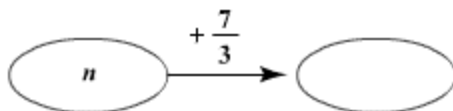
29. Make a flowchart for the expression $7k + 8$.

30. Make a flowchart for the expression $5(z + 3)$.

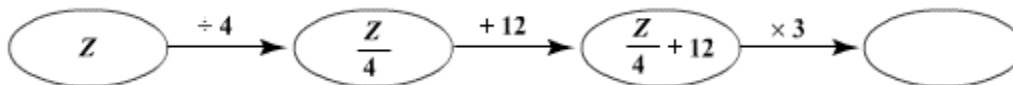
31. Complete the flowchart by filling the empty oval.



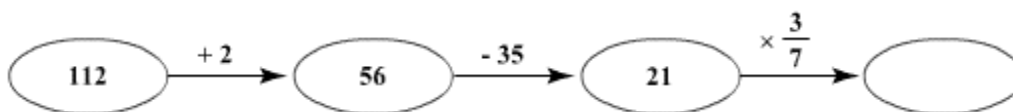
32. Complete the flowchart by filling the empty oval.



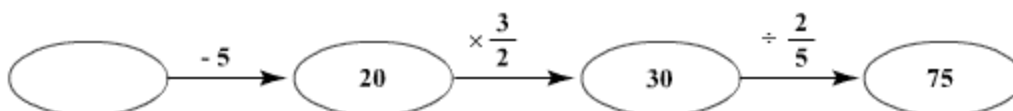
33. Complete the flowchart by filling the empty oval.



34. Complete the flowchart by filling the empty oval.



35. Complete the flowchart by filling the value of the empty oval.



Chapter 1.1 Review Answer Section

SHORT ANSWER

1. ANS:

$$x - 4$$

Four inches less than a number translates into $x-4$, where x could be any variable.

DIF: Average OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Correct! /B/ Does less than translate into division? /C/ Does less than mean addition or subtraction? /D/ Should you subtract from four or subtract four?

2. ANS:

$$x \div 9 - 3$$

The quotient of a number and nine, minus three translates into $x \div 9 - 3$, where x could be any variable.

DIF: Average OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Is it three minus the quotient or the quotient minus three? /B/ Is 9 the divisor or dividend? /C/ Correct! /D/ Does quotient mean multiplication or division?

3. ANS:

$$11 + 20 - x$$

Eleven increased by the difference of twenty and a number translates into $11+20-x$, where x could be any variable.

DIF: Average OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Should it be twenty minus a number or a number minus twenty? /B/ Correct! /C/ Does increased by translate into addition or multiplication? /D/ Does the difference translate into subtraction or division?

4. ANS:

$$a + \$5$$

Laura's allowance plus a \$5 bonus translates into $x+\$5$, where x could be any variable.

DIF: Basic OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Does plus translate into division? /B/ Does plus translate into subtraction? /C/ Does plus translate into addition or multiplication? /D/ Correct!

5. ANS:

$$7x - 10$$

Seven times a number, decreased by ten translates into $7x-10$, where x could be any variable.

DIF: Average OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Correct! /B/ Does times translate into addition or multiplication? /C/ Did you translate the entire phrase? /D/ Is it increased by ten or decreased by ten?

6. ANS:

$$3x + 12$$

Twelve more than a number times three translates into $3x+12$, where x could be any variable.

DIF: Average OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Is it increased by twelve or decreased by twelve? /B/ Does times translate into addition or multiplication? /C/ Did you translate the entire phrase? /D/ Correct!

7. ANS:

$$x \div 4 - 2$$

Two less than a number divided by four translates into $x \div 4 - 2$, where x could be any variable.

DIF: Average OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Is this two more than or two less than? /B/ Is it two minus something or two less than something? /C/ Correct! /D/ Should it be a number divided by four or four divided by a number?

8. ANS:

$$30 \div 3x$$

The quotient of thirty and three times a number translates into $30 \div 3x$, where x could be any variable.

DIF: Average OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Does times translate into addition or multiplication? /B/ Correct! /C/ Does quotient translate into division or subtraction? /D/ Do quotient and times translate into subtraction and addition or division and multiplication?

9. ANS:

$$9 - 2x$$

The difference of nine and twice a number translates into $9 - 2x$, where x could be any number.

DIF: Average OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Do difference and twice a number translate into subtraction and multiplication or division and addition? /B/ Does difference translate into division or subtraction? /C/ Correct! /D/ Does twice a number translates into addition or multiplication?

10. ANS:

$$5(x \times 13)$$

Five times the product of a number and thirteen translates into $5(x \times 13)$, where x could be any variable.

DIF: Average OBJ: 1-1.1 To use variables to write expressions.

TOP: To use variables to write expressions.

KEY: Variables, Write Expressions

NOT: /A/ Does product translate into division or multiplication? /B/ Does product translate into addition or multiplication? /C/ Correct! /D/ Does times translate into addition or multiplication?

11. ANS:

$$27$$

Complete calculations inside of grouping symbols; then follow order of operations by multiplying and dividing left to right first, and then adding and subtracting left to right.

DIF: Average OBJ: 1-1.2 To understand the order of operations.

TOP: To understand the order of operations.

KEY: Order of Operations

NOT: /A/ Did you follow order of operations correctly? /B/ Did you correctly follow order of operations? /C/ Do the parenthesis here tell you to add or multiply? /D/ Correct!

12. ANS:

$$40$$

Follow order of operations by first simplifying the expressions in the grouping symbols, then multiplying and dividing left to right, and last adding and subtracting left to right.

DIF: Average OBJ: 1-1.2 To understand the order of operations.

TOP: To understand the order of operations.

KEY: Order of Operations

NOT: /A/ Did you correctly follow order of operations? /B/ Correct! /C/ Do you add or multiply a number directly outside of grouping symbols? /D/ Did you follow order of operations correctly?

13. ANS:

$8N$

The number of chocolates Mike bought is obtained by multiplying 8 with N .

DIF: Basic REF: Page 11

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ This is the number of chocolates Maria bought. /b/ The total number of chocolates cannot be less than the number of chocolates Maria bought. /c/ Correct! /d/ Did you multiply 8 with the number of chocolates Maria bought?

14. ANS:

$2N - 50$

Subtract 50 from the original number of stamps in Mike's collection.

DIF: Basic REF: Page 11

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ This is the original number of stamps in Mike's collection. /b/ Did you find the number of stamps in Tom's collection? /c/ How many stamps did Mike have before he gave stamps to Mike? /d/ Correct!

15. ANS:

$D + 5$

Add 5 to the distance from Sandra's house and the school.

DIF: Basic REF: Page 11

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ Correct! /b/ Is Ronald's house closer to the school than Sandra's house? /c/ Is the distance from Sandra's house to the school positive or negative? /d/ What is the distance between Sandra's house and Ronald's house?

16. ANS:

$2T - 4$

Multiply Tony's weight by 2 and then subtract 4 to obtain the expression.

DIF: Basic REF: Page 11

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ Is Jim's weight two times Tony's weight? /b/ Correct! /c/ Does Jim weigh 4 pounds more than twice the weight of Tony? /d/ What is the expression to represent twice the weight of Tony?

17. ANS:

$$12N + 8$$

Add the number of apples and oranges to obtain the expression.

DIF: Basic REF: Page 11

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ How many oranges are there in the basket? /b/ What is a dozen? /c/ Correct! /d/ The total number of fruits cannot be less than the number of oranges.

18. ANS:

$$800 - 4F$$

Subtract the amount with which Michael starts a week from the amount he spends by Thursday.

DIF: Basic REF: Page 12

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ Did you convert dollars to cents? /b/ This is the expression for the amount in dollars. /c/ What is the amount that Michael spends by Thursday? /d/ Correct!

19. ANS:

$$6000 - 5M$$

Subtract the amount paid for five months from the total course fee.

DIF: Average REF: Page 12

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ Correct! /b/ You have written the expression for the remaining course fee at the end of June. /c/ Include June also in the number of months. /d/ What is the number of months from June to October?

20. ANS:

$$3000 - 100W$$

Subtract the weight of 100 cartons from the initial weight of the container.

DIF: Average REF: Page 12

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ This is the weight of 100 cartons. /b/ How many cartons are there in a container? /c/ Correct! /d/ This is the weight of the container with the cartons.

21. ANS:

$$\frac{T}{2} + 0.5$$

Add 0.5 with half the time taken by Carol.

DIF: Average REF: Page 11

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ Did you multiply the time Carol took by the correct value? /b/ Correct! /c/ Did you convert minutes into hours? /d/ Did you add correctly to obtain the expression?

22. ANS:

$$5N; 25$$

Multiply the cost of each gift by the number of gifts.

DIF: Average REF: Page 12

OBJ: 1-1.3 To practice using expressions to represent specific situations.

TOP: To practice using expressions to represent specific situations.

KEY: Expressions

NOT: /a/ Correct! /b/ The total cost of the gifts cannot be less than 5 dollars. /c/ Can the cost of five gifts be less than the cost of one gift? /d/ What is the cost of each gift?

23. ANS:

$$27$$

The value in the empty oval is obtained by subtracting 5 from the value of the previous oval.

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Did you subtract five from the value of the second oval? /b/ This is the value of the second oval and not the empty oval. /c/ Correct! /d/ Did you subtract the terms correctly?

24. ANS:

$$16$$

The value of the empty oval is obtained by dividing the value of the second oval by 2.

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Correct! /b/ What is the mathematical action between the second and third ovals? /c/ Did you use the correct mathematical action? /d/ Did you use the mathematical action between the third and fourth ovals?

25. ANS:
3

The value of the empty oval is obtained by subtracting 6 from the value of the second oval.

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Is multiplication the mathematical action between the first and second ovals? /b/ Correct! /c/ Did you use the correct mathematical action? /d/ What is the mathematical action between the second and first ovals.

26. ANS:
8

The value of the fourth oval is obtained by adding 8 to the value of the third oval.

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Correct! /b/ Use the mathematical action between the third and fourth ovals. /c/ Did you divide correctly? /d/ Did you use the correct mathematical action?

27. ANS:
48

The value of the empty oval is obtained by adding 6 to the value of the first oval.

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ What is the mathematical action between the first and second ovals? /b/ Did you use the correct mathematical action? /c/ Use the mathematical action between the first and second ovals. /d/ Correct!

28. ANS:
9

The value of the empty oval is obtained by using the back calculation of dividing the value of the second oval by 3.

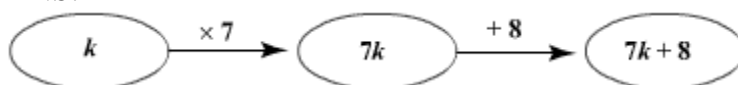
DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Did you divide the value of the second oval by the correct number? /b/ Correct! /c/ What is the mathematical action between the first and second ovals? /d/ Did you use the correct mathematical action?

29. ANS:



A

In this expression, multiplication comes before addition. Therefore, multiply k by 7 and then add 8.

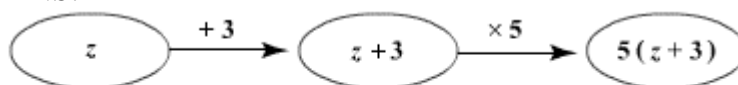
DIF: Advanced REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Correct! /b/ Does the first arrow show the correct mathematical action? /c/ What is the first mathematical action? /d/ Does the second arrow show the correct mathematical action?

30. ANS:



D

Add 3 to z and then multiply the output by 3.

DIF: Advanced REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ The values in the first and second mathematical actions are interchanged. /b/ Consider the variable in the expression first. /c/ What is the first mathematical operation performed on z ? /d/ Correct!

31. ANS:

$$\frac{y + 8}{5}$$

The value of the empty oval is obtained by dividing the value of the second oval by 8.

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Did you apply the mathematical action to the complete expression in oval 2? /b/ Did you divide by the correct number? /c/ What is the mathematical action between the second and third ovals? /d/ Correct!

32. ANS:

$$n + \frac{7}{3}$$

Add the number $\frac{7}{3}$ to the variable n .

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Correct! /b/ Did you add correctly? /c/ What is the mathematical action shown by the arrow? /d/ Did you use the correct mathematical action?

33. ANS:

$$3\left(\frac{z}{4} + 12\right)$$

The value of the empty oval is obtained by multiplying the value of the third oval by 3.

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Did you multiply the entire expression by the correct number? /b/ Correct! /c/ What is the mathematical action between the third and fourth ovals? /d/ What is the value in the third oval?

34. ANS:

9

The value of the empty oval is obtained by multiplying the value of the third oval by $\frac{3}{7}$.

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Correct! /b/ Did you use the correct mathematical action? /c/ Did you multiply the value of the third oval with the correct number? /d/ What is the mathematical action between the third and fourth ovals?

35. ANS:

25.0

Use backtracking to find the value of the empty oval.

DIF: Average REF: Page 19 OBJ: 1-1.4 To use flowcharts to build expressions.

TOP: To use flowcharts to build expressions.

KEY: Flowcharts, Expressions

NOT: /a/ Did you use the correct mathematical operation? /b/ Correct! /c/ Use the mathematical action shown by the first arrow. /d/ What is the mathematical action shown by the first arrow?