1. Write an algebraic expression for each phrase.
2. double a number
3. triple a number
4. quadruple a number
5. one half of a number
6. one third of a number
7. one quarter of a number
8. Write an algebraic expression for each phrase.
9. 6 more than a number
10. a number increased by 3
11. 2 increased by a number
12. 5 decreased by a number
13. 7 less than a number
14. a number decreased by 6
15. Write an algebraic expression for each phrase.
16. 4 more than triple a number
17. half a number, less 5
18. quadruple a number decreased by 1
19. 2 less than double a number
20. Write an equation for each phrase.
21. triple a number is 18
22. 7 more than a number is 11
23. half a number is 10
24. double a number, less 3 is 7
25. 5 less than one third a number is 1
26. 2 more than triple a number is 14
27. The sum of two consecutive integers
is 47.
28. Let *x* represent the lesser integer. Write an algebraic expression to represent the greater integer.
29. Write an equation to represent the sum of the integers.
30. Find the integers.
31. The sum of three consecutive odd integers is 57.
32. Let *x* represent the least integer. Write an algebraic expression to represent each of the other integers.
33. Write an equation to represent the sum of the integers.
34. Find the integers.
35. Three consecutive even integers have a sum of 102.
36. Write an algebraic expression to represent each integer.
37. Write an equation to represent the sum of the integers.
38. Find the integers.
39. Katherine is 2 years older than Christine. The sum of their ages is 16.
40. Write an algebraic expression for each girl’s age.
41. Write an equation to represent the sum of their ages.
42. How old is each girl?
43. The length of a rectangle is triple its width. The perimeter of the rectangle is
40 cm. What are the length and width?
44. Two friends enter a trivia challenge as a team. Fayth scored 200 more points than Jamal. As a team, they collected a total of 2250 points. How many points did each friend earn?
45. Natalie, Changal, and Samara play together as a forward line on a hockey team. At the end of the season, Chantal had scored eight more goals than Natalie, while Samara had scored twice as many goals as Natalie. The three girls scored a total of 52 goals. How many goals did each girl score?
46. Kyle sells used cars. He is paid $\$14/hour$ plus an $8\%$ commission on sales. What dollar amount of car sales must Kyle make to earn $\$1200$ in a $38-h$ work week?
47. A circular garden has a diameter of $12 m$. By how much should the diameter be increased to triple the area of the garden?

**Thinking Practice**

1. The length of Laurie’s rectangular swimming pool is triple its width. The pool covers an area of $192 m^{2}$.
2. If Laurie swims across the diagonal and back, how far does she travel?
3. At the same time Laurie starts swimming, her cat walks one lap around the edge of the pool. Laurie can swim $\frac{3}{4}$ as fast as her cat can walk. Who will return to the starting point first? Justify your answer.
4. A checkerboard has 64 congruent squares. Suppose a checkerboard has a diagonal length of $40 cm$. Find the area of each square on the board.
5. The mass of a banana plus its peel is 360 g. The mass of the banana is four times the mass of the peel. What is the mass of the peel?
6. Given that $y=4x+1$ and $z=5x-3$, and the value of $z$ is $7$, what is the value of $y$?
7. $-2$ b) $-9$ c) $2$ d) $9$ e) $29$

**Answers**

 1. a) 2*x* b) 3*x* c) 4*x*

 d)  e)  f) 

 2. a) *x* + 6 b) *x* + 3 c) 2 + *x*

 d) 5 − *x* e) *x* − 7 f) *x* − 6

 3. a) 3*x* + 4 b) 

 c) 4*x* − 1 d) 2*x* − 2

 4. a) 3*x* = 18 b) *x* + 7 = 11

 c)  d) 2*x* − 3 = 7

 e)  f) 3*x* + 2 = 14

 5. a) *x* + 1

 b) *x* + *x* + 1 = 47

 c) 23, 24

 6. a) *x* + 2, *x* + 4

 b) *x* + *x* + 2 + *x* + 4 = 57

 c) 17, 19, 21

 7. a) *x*, *x* + 2, *x* + 4

 b) *x* + *x* + 2 + *x* + 4 = 102

 c) 32, 34, 36

 8. a) *C*, *C* + 2

 b) 16 = *C* + *C* + 2

c) Katherine: 9; Christine: 7

 9. 5 cm, 15 cm

10. Jamal: 1025 Fayth: 1225

11. Natalie: 11 Samara: 22 Chantal: 19

12. $8350

13. 8.8 m

14. a) 50.6 m

 b)The cat gets back first. Laurie has to swim 50.6 m, and the cat has to walk 64 m. If the cat walks 64 m, Laurie can swim

 0.75(64)=48 m in the same time, which means she doesn’t get back before the cat does.

15. $12.5 cm^{2}$

16. 72 g

17. D