Practice 7.3

Simplify each expression. Then state the coefficient of the variable in each expression.

1. $u + u + u + u$

2. $v + v + 5 - 2$

3. $w + w + w + w + w + w + 15 - 7$

Simplify each expression.

4. $3p + p$

5. $4p + 5p$

6. $7p - 2p$

7. $3p - 2p + 5p$

8. $2p + 3p + 4p + 5p - 6p - 7p$

State whether each pair of expressions are equivalent.

9. $5x$ and $x + x + 3x$

10. $4y + 2y + y$ and $5y + y$

11. $2z + 5$ and $z + 8 + z - 3$

12. $2w - 5$ and $5 - 2w$

13. $11u - 4u$ and $11 - 4 + u$

14. $3v + v$ and $\frac{12v}{3}$

Simplify each expression.

15. $3x + 5 + 4x + 6$

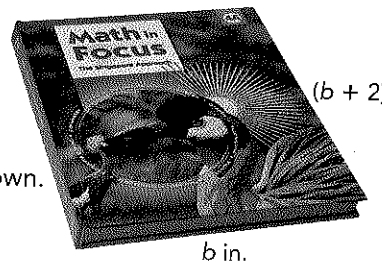
16. $3x + 2x + 3x + 2$

17. $17 + 4w - 12 - w$

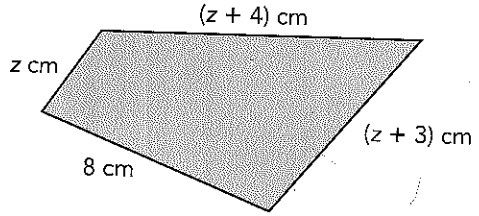
18. $9 + 5u + 6u - 7 - 8u + 4$

Solve.

19. A book has a length of $(b + 2)$ inches and a width of b inches. Write a simplified expression for the perimeter of the book.



20. The figure shows a quadrilateral. The length of each side is given as shown. Find the perimeter of the quadrilateral in terms of z.



21 Anne is currently h years old. Bill is currently $2h$ years old and Charles is currently 8 years old. Find an expression for each person's age after h years. Then find an expression for the sum of their ages after h years.

22 There are 18 boys in a class. There are w fewer boys than girls. How many students are there in the class?

23 A rectangular garden has a length of $(y + 2)$ yards and a width of $(4y - 1)$ yards. Find the perimeter of the garden in terms of y.

24 Kayla had $64b$ dollars. She gave $\frac{1}{8}$ of it to Luke and spent \$45. How much money did Kayla have left? Express your answer in terms of b.

25 A rectangle has a length of $(2m + 1)$ units and a width of $(10 - m)$ units. A square has sides of length $\frac{2m + 1}{2}$ units.

a) Find the perimeter of the rectangle.

b) Find the perimeter of the square.

c) Find the sum of the perimeters of the two figures if $m = 6$.

d) The perimeter of the rectangle is greater than the perimeter of the square. Find how many units greater the rectangle's perimeter is than the square's perimeter.

26 ***Math Journal*** Rita simplified the expression $10w - 5w + 2w$ in this way:

$$10w - 5w + 2w = 10w - 7w$$
$$= 3w$$

Is Rita's answer correct? If not, explain why it is incorrect.