

3.4 EXERCISES

HOMEWORK KEY

◆ = **MULTIPLE CHOICE PRACTICE**
Exs. 15, 16, 27, 54, and 63–65

○ = **HINTS AND HOMEWORK HELP**
for Exs. 13, 25, and 55 at classzone.com

SKILLS • PROBLEM SOLVING • REASONING

EXAMPLES

1 and 2

on p. 146
for Exs. 3–17

1. **VOCABULARY** Copy and complete: An equation that is true for all values of the variable is called a(n) ? .

2. **WRITING** Explain why the equation $4x + 3 = 4x + 1$ has no solution.

SOLVING EQUATIONS Solve the equation. Check your solution.

3. $8t + 5 = 6t + 1$

4. $k + 1 = 3k - 1$

5. $8c + 5 = 4c - 11$

6. $8 + 4m = 9m - 7$

7. $10b + 18 = 8b + 4$

8. $19 - 13p = -17p - 5$

9. $9a = 6(a + 4)$

10. $5h - 7 = 2(h + 1)$

11. $3(d + 12) = 8 - 4d$

12. $7(r + 7) = 5r + 59$

13. $40 + 14j = 2(-4j - 13)$

14. $5(n + 2) = \frac{3}{5}(5 + 10n)$

15. **◆ MULTIPLE CHOICE** What is the solution of the equation $8x + 2x = 15x - 10$?

(A) -2

(B) 0.4

(C) 2

(D) 5

16. **◆ MULTIPLE CHOICE** What is the solution of the equation $4y + y + 1 = 7(y - 1)$?

(A) -4

(B) -3

(C) 3

(D) 4

17. **REASONING** The steps and reasons in solving $4(x + 3) = 6x - 4$ are shown below in no particular order. Correctly order the steps and corresponding reasons.

Steps	Reasons
$12 = 2x - 4$	Divide each side by 2.
$16 = 2x$	Subtract $4x$ from each side.
$8 = x$	Add 4 to each side.
$4x + 12 = 6x - 4$	Distributive property

EXAMPLE 4

on p. 148
for Exs. 18–26,
28–29

SOLVING EQUATIONS Solve the equation, if possible.

18. $w + 3 = w + 6$

19. $16d = 22 + 5d$

20. $8z = 4(2z + 1)$

21. $12 + 5v = 2v - 9$

22. $22x + 70 = 17x - 95$

23. $2 - 15n = 5(-3n + 2)$

24. $12y + 6 = 6(2y + 1)$

25. $5(1 + 4m) = 2(3 + 10m)$

26. $2(3g + 2) = \frac{1}{2}(12g + 8)$

27. **◆ MULTIPLE CHOICE** Which equation is equivalent to

$\frac{2}{3}(9x - 3) = 5(2x + 7)$?

(A) $-3 = 4x + 35$

(B) $-2 = 4x + 35$

(C) $-2 = 7x + 35$

(D) $2 = 16x + 35$