SKILLS PRACTICE 23

For use with Section 3-3

More Distributive Properties

NAME _____

DATE _____

Simplify by distributing multiplication or division over addition or subtraction. Write in lowest terms.

1. $2(3x + 4)$ _____
2. $2(3x - 4)$ _____
3. $-1(7 + x)$ _____
4. $-(7 - x)$ _____
5. $\frac{1}{2}(4x + 6)$ _____
6. $\frac{4x + 6}{2}$ SKIP _____
7. $(8x - 5) \cdot 7$ _____
8. $(3 - 4x)(-6)$ _____
9. $\frac{6x - 4}{-2}$ SKIP _____
10. $3(x - y + 7)$ _____
11. $(-3)(2x - 4y - 6)$ _____
12. $(2x - 4y - 6)(-3)$ _____
13. $-(8 - x)$ _____
14. $-(x - 8)$ _____
15. $-1(6x - 5)$ _____
16. $-(6x - 5)$ _____
17. $(-8 + 6x)(-4)$ _____
18. $(4 + 6x - 5y) \cdot 2$ _____
19. $\frac{8x - 6y + 9}{-2}$ SKIP _____
20. $8\left(\frac{1}{2} + \frac{3}{4}x\right)$ _____

Simplify exercises by commuting and associating. SKIP 21-25

21. $5 - 6x + 3$ _____
22. $-8 + 5x - 9$ _____
23. $9 - x - 6$ _____
24. $5 + 4y - 8$ _____
25. $3 + 7x + 4$ _____

SKILLS PRACTICE 24

For use with Section 3-4

Like Terms and Common Factors

NAME _____

DATE _____

Combine like terms.

1. $2x + 3x$ _____
2. $2x - 5x$ _____
3. $-4x + 9x$ _____
4. $-3x - 5x$ _____
5. $4x + 2x - 2$ _____
6. $7x - x$ _____
7. $5 - 5x + 8x$ _____
8. $5 - 5x + 8$ _____

Simplify by distributing and combining like terms.

9. $2(3x + 5) - 5x$ _____
10. $2(x - 5) + 3$ _____
11. $8 - 2(7x + 3)$ _____
12. $8 - 2(7x - 3)$ _____
13. $5 - 1(3x + 4)$ _____
14. $5 - (3x + 4)$ _____
15. $-4 - 3(4x - 5)$ _____
16. $-5(4x + 2) - 8$ _____
17. $-(4 - x) + 6$ _____
18. $9 + 2(3x + 4)$ _____
19. $9 - 2(-3x - 4)$ _____
20. $4 - 2(x + 4) - 3(5x - 2)$ _____

Write expressions to describe the given situations.

21. You have x cents, then you spend 35 cents. How much do you now have?

_____

22. You are y years old. Your little brother is three fourths of your age. How old is your little brother?

_____

23. There are twice as many freshmen in your class as there are sophomores. If there are s sophomores, how many freshmen are there?

_____

24. Evaluate $2(x - 4)$ if x is

a. -3 _____ b. 9 _____

25. Evaluate $2x^2 - 3x + 5$ if x is

a. -2 _____ b. 2 _____

SKILLS PRACTICE 25

For use with Section 3-4

Like Terms and Common Factors

NAME _____

DATE _____

Simplify by distributing and combining like terms.

1. $3 - (x - 4)$ _____
2. $5x - x + 3(x + 5)$ _____
3. $4 - 4x(x + 6) - 8$ _____
4. $5(x + 3) - 3x(2x - 8)$ _____
5. $4x^2 - 3x^2 + 5x - x^2 - 1$ _____
6. $5 - 6x(5 - x) + 4(x + 3)$ _____
7. $4x^2 - 3x + 7 + 6x^2 + 7x - 9$ _____
8. $2(3x^2 + 5x - 3) - (x^2 - 6x + 7)$ _____
9. $5(x - 3) + 5x(4x - 5)$ _____
10. $8x - (x^2 - 8x) + 8$ _____
11. $x^3 + y^3 - 4x^2 + 8x^2 - 5x + 6x + 9$ _____
12. $8(x - 9) - 4(3x - 6)$ _____
13. $4x^2 - (5x^2 - 8x) + 9x$ _____
14. $(3x - 8) \cdot (-3) - (3x - 6)$ _____
15. $8 - (7 - x) + 3x - 9$ _____
16. $x(2y + 3) - 5xy + 7x$ _____
17. $y(x + 4) + 4(y - 8)$ _____
18. $3x(3x + 5) + 5(3x + 5)$ _____
19. $x(x - 5) + 5(x - 5)$ _____
20. $5x(5x + 2) - 2(5x + 2)$ _____

13. 22 14. –3 15. –2

16. a. 4 b. 1 c. not defined d. 0

17. a. 38 b. 70

18. $x = -6$ 19. $x = 2$ 20. $x = -7$

21. $x = -18$ 22. $x = -14$ 23. $x = 5\frac{3}{4}$

24. $x = 5$

SKILLS PRACTICE 18

1. $y + 11$ 2. $x - 2$ 3. $y + 2$

4. $3x - 20$ 5. $-x + 5$ 6. $-2x + 17$

7. $-5x - 10$ 8. $10x$ 9. $-32y$

10. $-24x$ 11. $20x$ 12. $-56x$

13. $32x$ 14. $6x$ 15. $-6x$

16. $-2x$ 17. $6x$ 18. $-28x$

19. x 20. $4x$

21. a. 11 b. 3 22. 2^6

23. $8x + 3$ 24. 2 25. 4

SKILLS PRACTICE 19

1. $x = 3$ 2. $x = 4$ 3. $x = -4$

4. $x = 6$ 5. $x = 3$ 6. $x = -10$

7. $x = 9$ 8. $x = -2\frac{1}{4}$ 9. $x = -16\frac{1}{5}$

10. $x = 3$ 11. $4 = x$ 12. $x = 15$

13. $x = -9$ 14. $x = -1$ 15. $x = -5$

16. $x = 4\frac{1}{3}$ 17. $x = -7$ 18. $x = 18$

19. $x = 17$ 20. $x = -3$ 21. $3x - 8$

22. $8 - 3x$ 23. $2^3 \cdot 3$

24. a. –4 b. 14

25. a. not defined b. –1

SKILLS PRACTICE 20

1. a. 33 b. $4x + 5 = 37$ c. 8 d. 4 (12) + 5 = 53 No, because it would take him 53 minutes to do 12 problems.

2. a. $545 - 45b$ = # of ¢ left after b bags b. 8 c. Wrote an equation and solved d. 5¢ or $0.05 e. 545 – 45 (15) = –130 No. After 15 bags he would have –1.30 dollars remaining which is less than 0.

3. 25 4. $-2\frac{5}{6}$ 5. –17.5

6. –490

SKILLS PRACTICE 21

1. 9 2. 14 3. –48

4. 1 5. 2 6. –24

7. –93 8. –3 9. 13

10. $5\frac{1}{3}$ 11. 8 12. 8

13. 0 14. –6

15. a. 2 b. 12

16. a. not defined b. 0

17. $x - 5$ 18. $-x + 13$ 19. $45x$

20. $6x$ 21. $x = -2$ 22. $x = -6$

23. $x = -2$ 24. $x = 5$

25. a. i. m = # of miles she rides ii. $4m$ = # of miles ridden iii. $4m + 6$ = total number of minute a ride will take b. 50 min c. 24 mi d. 15 mph

SKILLS PRACTICE 22

1. $3x + 18$ 2. $5x - 40$ 3. $-6x + 30$

4. $-3x - 9$ 5. $x^2 + 2x$ 6. $2x^2 + 4x$

7. $2x - 6$ 8. $6x + 2$ 9. $-6x + 4\frac{1}{2}$

10. $-2x - \frac{4}{9}$ 11. $2x + 13$ 12. $3x - 7$

13. $31 - 4x$ 14. $40x - 28$

15. $-2x + 23$ 16. $-5x + 26$

17. $6x + 3$ 18. $-8x - 22$

19. $22 - 5x$ 20. $30x + 39$

21. $x = 6\frac{1}{2}$ 22. $x = 26$

23. $x = 1$ 24. $x = 0$ 25. $x = -2$

SKILLS PRACTICE 23

1. $6x + 8$ 2. $6x - 8$ 3. $-7 - x$

4. $-7 + x$ 5. $2x + 3$ 6. $2x + 3$

7. $56x - 35$ 8. $-18 + 24x$ 9. $-3x + 2$
10. $3x - 3y + 21$ 11. $-6x + 12y + 18$
12. $-6x + 12y + 18$ 13. $-8 + x$
14. $-x + 8$ 15. $-6x + 5$
16. $-6x + 5$ 17. $32 - 24x$
18. $8 + 12x - 10y$ 19. $-4x + 3y - 4\frac{1}{2}$
20. $4 + 6x$ 21. $-6x + 8$ 22. $5x - 17$
23. $-x + 3$ 24. $4y - 3$ 25. $7x + 7$

SKILLS PRACTICE 24

1. $5x$ 2. $-3x$ 3. $5x$
4. $-8x$ 5. $6x - 2$ 6. $6x$
7. $5 + 3x$ 8. $-5x + 13$ 9. $x + 10$
10. $2x - 7$ 11. $-14x + 2$ 12. $14 - 14x$
13. $1 - 3x$ 14. $1 - 3x$ 15. $11 - 12x$
16. $-20x - 18$ 17. $x + 2$
18. $17 + 6x$ 19. $17 + 6x$ 20. $2 - 17x$
21. $x - 35$ 22. $\frac{3}{4}y$ 23. $2s$
24. a. -14 b. 10 25. a. 19 b. 7

SKILLS PRACTICE 25

1. $7 - x$ 2. $7x + 15$
3. $-4x^2 - 24x - 4$ 4. $-6x^2 + 29x + 15$
5. $5x - 1$ 6. $6x^2 - 26x + 17$
7. $10x^2 + 4x - 2$ 8. $5x^2 + 16x - 13$
9. $20x^2 - 20x - 15$ 10. $-x^2 + 16x + 8$
11. $x^3 + y^3 + 4x^2 + x + 9$
12. $-4x - 48$ 13. $-x^2 + 17x$
14. $-12x + 30$ 15. $-8 + 4x$
16. $-3xy + 10x$ 17. $xy + 8y - 32$
18. $9x^2 + 30x + 25$ 19. $x^2 - 25$
20. $25x^2 - 4$

SKILLS PRACTICE 26

1. commutative addition 2. symmetric 3. additive inverse 4. additive identity 5. definition of subtraction 6. associative addition 7. commutative multiplication 8. transitive 9. distributive 10. multiplicative identity 11. multiplicative inverse 12. definition of division 13. commutative multiplication 14. definition of subtraction 15. distributive 16. associative multiplication 17. reflexive 18. commutative addition 19. associative addition 20. distributive

21. $8x$ 22. $3 + 5x$ 23. $5x - 9$
24. $3x - 7$ 25. $3x + 9$ 26. $30x$

SKILLS PRACTICE 27

1. a. commutative addition b. associative addition c. arithmetic
2. a. distributive b. arithmetic c. commutative addition d. associative addition e. arithmetic
3. a. multiplicative property of -1 b. distributive c. multiplicative property of -1 d. associative addition e. arithmetic f. definition of subtraction
4. a. definition of subtraction b. commutative addition c. associative addition d. arithmetic e. definition of subtraction f. distributive g. arithmetic h. commutative addition
5. a. additive property of equality b. associative addition c. additive inverse d. additive identity e. arithmetic
6. a. multiplicative property of equality b. associative multiplication c. multiplicative inverse d. multiplicative identity e. arithmetic

SKILLS PRACTICE 28

1. $5x - 15$ 2. $-x + 2$ 3. $-16 + 8x$
4. $6x + 15$ 5. $1 + x$ 6. $7x - 13$
7. $-1 + 8x$ 8. $4x + 5$ 9. $16x - 9$
10. $23x - 26$ 11. $2(x + 2)$
12. $3(2 - x)$ 13. $2(x + y)$
14. $4(2x - 3)$ 15. $3(1 - 2x + 3y)$
16. a. distributivity b. arithmetic c. definition of subtraction d. commutative addition e. associative addition f. arithmetic g. distributive h. arithmetic