Pg. 115-117 #8, 9, 17, 18, 25-31 odd, 43, 47, 49

8. Terms: $7h$, 3
Coefficient: 7
Constant: 3

9. Terms: g, 12, $9g$
Coefficients: 1, 9
Constant: 12

17. g^5

18. $8w^4$

25. 9

27. 11

29. 10

31. 6

43. 23

47. 22

49. 46

Pg. 122 #3-15 odd, 23, 24, 25, 31, 40

3. $8 - 5$

5. $28 \div 7$

7. $18 - 3$

9. $x - 13$

11. $18 \div a$

13. $7 + w$ or $w + 7$

15. $y + 4$ or $4 + y$

23. The sum of n and 6; 6 more than a number n

24. 4 times a number w; The product of 4 and a number w

25. A number b less than 15; 15 take away a number b

31. **a.**

Game	1	2	3	4	5
Cost	\$5	\$8	\$11	\$14	\$17

b. $2 + 3g$ **c.** \$26

40. D

Name Answers Date

Review 3.1-3.2

Identify the terms, coefficients, and constants in the expression.

1) $3 + 7c + 9e$ Terms: 3, 7c, 9e Coefficients: 7, 9 Constants: 3

2) $5m + 9$ Terms: 5m, 9 Coefficients: 5 Constants: 9

3) $3p^2 + 7$ Terms: $3p^2$, 7 Coefficients: 3 Constants: 7

Evaluate the expression when $c = 4$, $d = 6$, and $e = 10$. SHOW ALL WORK.

4) $10 \bullet e$

$10 \cdot 10 = 100$

5) $\frac{24}{c}$

$\frac{24}{4} = 6$

6) $9 + e$

$9 + 10 = 19$

7) $16 \div c$

$16 \div 4 = 4$

8) $30d$

$30(6) = 180$

9) $\frac{60}{d}$

$\frac{60}{6} = 10$

Evaluate the expression when $m = 5$ and $n = 8$. SHOW ALL WORK.

10) $4n - 3m$

$4(8) - 3(5)$

$= 32 - 15$

$= 17$

11) $\frac{6m}{n - 3}$

$\frac{6(5)}{8 - 3}$

$= \frac{30}{5}$

$= 6$

12) Describe and correct the error in evaluating the expression when $m = 10$.

$3m - 6 = 3 \bullet 10 - 6$
$= 3 \bullet 4$
$= 12$

They didn't follow the order of operations. They should have multiplied first.

$3 \cdot 10 - 6$
$= 30 - 6$
$= 24$

Write the phrase as an expression.

13) 6 more than 4

$4+6$

14) 7 less than 15

$15-7$

15) 3 times a number x

$3x$

16) the quotient of a number m and 4

$\frac{m}{4}$

17) the product of 8 and a number p

$8p$

18) twice a number x

$2x$

19) a number y decreased by 10

$y-10$

20) 7 fewer than a number k

$k-7$

21) Describe and correct the error in writing the phrase as an expression.

X	12 less than a number x $12 - x$

The terms should be switched.
It should be $x-12$.

For #22-24, write the phrase as an expression. **Then** evaluate when $x = 2$ and $y = 10$.

22) twelve more than the product of 5 and a number x

$5x+12 \rightarrow 5(2)+12$
$= 10+12$
$= 22$

23) 17 less than the quotient of 200 and a number y

$\frac{200}{y}-17 \rightarrow \frac{200}{10}-17$
$= 20-17$
$= 3$

24) 15 decreased by the product of a number x and 4

$15-4x \rightarrow 15-4(2)$
$= 15-8$
$= 7$

15) Your uncle is 2 years older than 3 times your age.

a) You are x years old. Write an expression to describe your uncle's age.

$3x+2$

b) You are 12 years old. How old is your uncle?

$3(12)+2$
$= 36+2$
$= 38$

Pg. 130 # 1, 2, 4 – 8, 11 – 23 odd, 28 – 32 even, 40, 43

1. *Sample answer:*

$$\frac{1}{5} + \frac{3}{5} = \frac{3}{5} + \frac{1}{5}$$

$$\frac{4}{5} = \frac{4}{5}$$

2. *Sample answer:*
$(x + 8) + 4 = x + (8 + 4) = x + 12$

4. $9 + (7 + w) = (9 + 7) + w$
does not belong because it demonstrates the Associative Property of Addition whereas the other statements demonstrate the Commutative Property of Addition.

11. The grouping of the numbers did not change. The statement illustrates the Commutative Property of Addition because the order of the addends changed.

28. $8 \cdot (y \cdot 9) = 72y$

30. $13.2 \cdot (1 \cdot x)$

32. $2 + c$

40. $2^4 \times 3^2$

43. B

Pg. 137 #3, 17-31 odds, 35

3. $4 + (x \cdot 4)$ does not belong because it does not represent the Distributive Property.

17. $3x + 12$

19. $6s - 54$

21. $96 + 8a$

23. $72 - 12k$

25. $63 + 9c$

27. $40g + 24$

29. $4x + 4y$

31. $7p + 7q + 63$

35. $5(r + 15)$ and $5r + 5 \cdot 15$, because they are equivalent expressions.

Pg. 138 #39-47 all, 49, 59

39. $6x + 25$

40. $29 + 8x$

41. $68 + 28k$

42. $6x + 3$

43. $19y + 5$

44. $7w$

45. $3d + 1$

46. $4n - 3$

47. $5v$

49. $2.7w - 14.04$

59. Area: $8x + 64$
Perimeter: $2x + 32$

3.4 Practice A

1. 115 **2.** 150 **3.** 486 **4.** 413

5. $\frac{1}{3}\left(2 + \frac{3}{4}\right) = \frac{11}{12}$ **6.** $\frac{2}{5}\left(3 + \frac{1}{2}\right) = 1\frac{2}{5}$

7. $\frac{3}{8}\left(5 + \frac{2}{3}\right) = 2\frac{1}{8}$ **8.** $4x + 24$

9. $8c - 40$ **10.** $14y + 56$

11. $9e - 36$ **12.** $24 + 6n$

13. $21 + 7x + 28 = 7x + 49$

14. 5 must be multiplied by both x and 9; $5x + 45$

15. C; You need to add the two activities and then multiply the sum by 5.

16. $5(r + 3) = 5r + 15$

17. $9w + 54 + 4 = 9w + 58$

18. $15 + 5m - 7 = 5m + 8$

19. $11m + 7$ **20.** $5f - 8$

21. $1\frac{7}{8}x$ **22.** $3.1p - 8.37$

Pg. 146 #1-15 all AND Pg. 147 #1-3

1. 10
2. 0
3. 48
4. $2x$ or $x \cdot 2$
5. $25 + 50$ or $50 + 25$
6. $40 \div 5$
7. $3.1 + (8.6 + m) = (3.1 + 8.6) + m$
   Assoc. Prop. of Add.
   $= 11.7 + m$
   Add 3.1 and 8.6.
8. $(10 \cdot n) \cdot 7 = (n \cdot 10) \cdot 7$
   Comm. Prop. of Mult.
   $= n \cdot (10 \cdot 7)$
   Assoc. Prop. of Mult.
   $= n \cdot 70$
   Multiply 10 and 7.
   $= 70n$
   Comm. Prop. of Mult.
9. $3(15w) = (3 \cdot 15)w$
   Assoc. Prop. of Mult.
   $= 45w$
   Multiply 3 and 15.
10. $4x + 32$
11. $12y - 60$
12. $4q + 2$
13. $15r + 17$

14. $8s$

15. $2t + 5$

1. C

2. F

3. $26

Name____KEY_____ Date_____

Chapter 3 - Review

3.1 - Algebraic Expressions

Identify the terms, coefficients, and constants in the expression.

1) $9 + 12c + 3e$ Terms: ___9, 12c, 3e_____ Coefficients: __12, 3_____Constants:____9_____

2) $8k + 13$ Terms: ___8k, 13_____ Coefficients: ___8_____ Constants:____13____

3) $9p^2 + 4$ Terms: _____$9p^2$_____ Coefficients: ____9_____ Constants:___4____

Evaluate the expression when $c = 4$, $d = 6$, and $e = 10$. SHOW ALL WORK.

4) $c + d$

10

5) $\frac{24}{c}$

6

6) $10 \bullet e$

100g

7) $72 \div c$

18

8) $16 \div c$

4

9) $\frac{512}{d}$

85.3 (3 is everlasting)

Evaluate the expression when $m = 5$ and $n = 8$. SHOW ALL WORK.

10) $9n - 4m$

52

11) $\frac{12m}{n - 3}$

12

12) Twenty-five students go to lunch. Pizza costs $3 and sandwiches cost $2. Twelve students buy pizza. What is the total amount of money spent on sandwiches?

$26

3.2 - Writing Expressions

Write the phrase as an expression.

13) the quotient of a number m and 4

m ÷ 4

14) 7 fewer than a number k

k - 7

15) the product of 8 and a number p

8p or 8 • p

16) the total of a number c and 3

c + 3

17) Describe and correct the error in writing the phrase as an expression.

It should be 2x – 17, because it says 17 less than

✗ 17 less than twice a number x
$17 - 2x$

18) You eat five slices of bread. Your friend eats two slices fewer than you eat. Write an expression that describes the number of slices your friend eats.

5 – 2

3.3 - Properties of Addition & Multiplication

Tell which property the statement illustrates.

19) $3 + 5 = 5 + 3$

Comm. Prop of +

20) $12 + 0 = 12$

Addition Property of Zero

22) $6 \bullet 7 = 7 \bullet 6$

Comm. Prop of x

23) $8 \bullet (10 \bullet 7) = (8 \bullet 10) \bullet 7$

Assoc. Prop of Mult.

24) $17 \bullet 1 = 17$

Mult. Prop of One

25) $8 + (7 + 5) = (8 + 7) + 5$

Assoc. Prop of +

Simplify the expression. Explain each step.

26) $2 + (a + 8)$

$= 2 + (8 + a)$ ___Comm. Prop of +_____

$= (2 + 8) + a$ ___Associative Prop of +_____

$= 10 + a$ ____Add_____

27) $(2x) \bullet 5 = 2 \bullet (x \bullet 5)$ ___Associative Prop of Mulyt_____

$= 2 \bullet (5 \bullet x)$ ___Comm. Prop. of Mult._____

$= 10x$ ____Mult._____

28) $7 \bullet x \bullet 5 = 7 \bullet 5 \bullet x$ ____ Comm. Prop of Mult._____

$= 35x$ _____ Mult._____

_____

29) Describe and correct the error made in simplifying the expression.

54 • 1 does not equal 1. The Mult. Property of One says the product of any number and 1 is that number, so 54 • 1 = 54

X	$54 \bullet 1 = 1$ Multiplication Property of One

30) You and your friend are selling your old CDs. Your friend sells 14 the first day and x the next day. You sell y the first day and 6 the next day. Write an expression that shows that the total number of CDs sold both days. Rewrite your answer using the Commutative Property of Addition.

Friend: 14 + x
Me: y + 6

14 + x + y + 6 = 14 + 6 + x + y

20 + x + y

Use the Distributive Property.

31) 5×23

5 (20 + 3)

100 + 15

115

32) $7(59)$

7 (50 + 9)

350 + 63

413

33) $\frac{1}{4} \times 2\frac{3}{5}$

¼ (2 + 3/5)

½ + 3/20

13/20

Use the Distributive Property to simplify the expression.

34) $4(x + 6)$

4x + 24

35) $8(c - 5)$

8c – 40

36) $7(2y + 8)$

14y + 56

37) Each day you do homework for *m* minutes and watch TV for 30 minutes. Which expression can you use to find how many minutes you do both activities in 5 days? **Explain your reasoning.**

a) $5m + 30$ b) $5(m + 6)$ c) $5(m + 30)$ d) $m(5 + 30)$

I chose C because m + 30 is how many minutes I do homework and watch TV in one day. I have to multiply all of it by 5 to figure out 5 days.