

# **Math Connections Worksheets**

MAT0018C Developmental Math I

## **Chapter 7**

Exponents and Polynomials



## 7. / Adding a Subtracting Polynomials

Determine if the following is a Monomial, Binomial, Trinomial, or None of these

1.  $x^2 + 3x - 2$

5.  $4xy$

2.  $x - 2y$

6.  $\frac{4x}{y}$

3.  $3x^{1/2} + 2$

7.  $\frac{1}{3}x^3$

4.  $a^2 - 3a + 5$

8.  $3x^3 - 2x$

Simplify

9.  $-(3x^2 - 2x + 1)$

11.  $-(-3z + 4)$

10.  $-(w + 2)$

12.  $-(-4d^2 - 2d - 4)$

Add or subtract as indicated

13.  $(2x + 3) + (4x - 1)$

17.  $(7x^2 - 3x + 1) + (x^2 - 2x)$

14.  $(3y - 2) + (-6y - 3)$

18.  $(9w^2 - 2w) - w^3 + 2w^2 - 4w$

15.  $(9z + 2) - (10z + 1)$

19.  $(z^2 - 2z + 4) + (-3z^2 + 4z - 10)$

16.  $(6x^3 - 3) - (6x^3 + 3)$

20.  $(9d^3 + 3d^2 - 4d) - (4d^2 - 5d + 4)$

Evaluate each polynomial for  $x = 2$

21.  $-3x - 4$

24.  $x^2 - 6x - 3$

22.  $4x^2 - 15$

25.  $5x^3 - 4x^2 + 6x - 1$

23.  $\frac{3x^2}{6} - 1$

26.  $\frac{3x}{2} - 4$

## 7.2 Multiplication Properties of Exponents

### Multiply

27.  $x^3 \cdot x^4$

28.  $y^7 \cdot y^9$

29.  $b \cdot b^4$

30.  $3z^3 \cdot 4z^5$

31.  $(-4xy^4)(5x^3y^4)$

32.  $(3xy)(-4x^3y^2)(-x^2y^4)$

### Simplify

33.  $(x^5)^3$

34.  $(x^3)^4 \cdot (x^2)^3$

35.  $(3a^4)^2$

36.  $(2d^5)^4$

37.  $(3a^3b^4)^3$

38.  $(-3x)(2x^4)^2$

39.  $(5d^4)^2(2d^5)^3$

40.  $(2xy)^2(3x^4y^5)^3$

### Multiply

41.  $4(k - 3)$

42.  $-3(8r + 3q)$

43.  $-2(2x + 2y - 6z)$

44.  $5(a + 6b - 2)$

## 7.3 Multiplying Polynomials

### Multiply

45.  $3x(6x^2 - 3)$

46.  $4z(2z^2 - 3z + 5)$

47.  $6w^2(3w - 4)$

48.  $5y^4(y^2 - 5y - 2)$

49.  $(x + 2)(x - 3)$

50.  $(3x - 4)(2x - 3)$

51.  $(4a + 2)(3a + 2)$

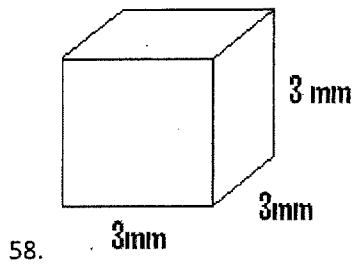
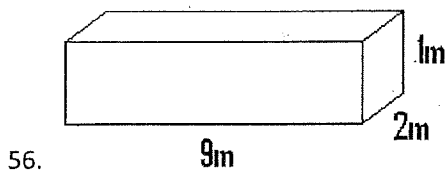
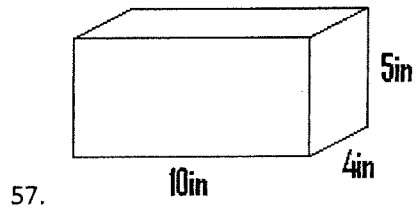
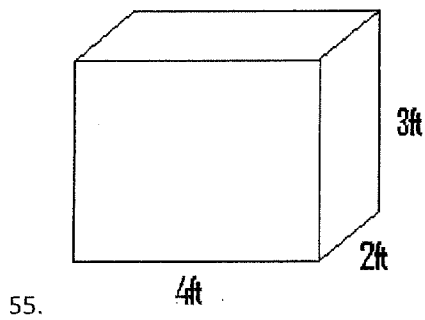
52.  $(3r - 2)(4r - 2)$

53.  $(2x + 3)^2$

54.  $(3z - 2)^2$

7.4 • Volume of a Rectangular Solid

Find the Volume



## Additional Exercises 7.5

Convert each measurement as indicated.

1.  $2\frac{1}{3}$  miles to feet

1. \_\_\_\_\_

2. 7920 feet to miles

2. \_\_\_\_\_

3. 15 feet to yards

3. \_\_\_\_\_

4. 132 in. = \_\_\_\_\_ yd. \_\_\_\_\_ ft.

4. \_\_\_\_\_

5. 39 feet = \_\_\_\_\_ yd.

5. \_\_\_\_\_

6. 8 feet 4 in. = \_\_\_\_\_ in.

6. \_\_\_\_\_

Perform each indicated operation. Simplify the result if possible.

7. 3 yd. 2 ft. + 3 yd. 2 ft. + 4 yd. 9 ft.

7. \_\_\_\_\_

8. 7 ft. 2 in. - 3 ft. 9 in.

8. \_\_\_\_\_

9. 6 yd. 8 ft. + 2 yd. 10 ft.

9. \_\_\_\_\_

10. Jenna's mom is making hair bows for the basketball team. It takes 39 inches of ribbon to make each bow. How many yards of ribbon will she need to make 9 bows?

10. \_\_\_\_\_

11. An airplane is cruising at an altitude of 39,600 feet. How many miles is this?

11. \_\_\_\_\_

Convert each measurement as indicated.

12. 100 m to kilometers

12. \_\_\_\_\_

13. 34.2 mm to decimeters

13. \_\_\_\_\_

14. 0.083 m to millimeters

14. \_\_\_\_\_

15. A 68 cm flag pole is mounted on a 17.5 cm pedestal. Find the height of the top of the flagpole from the ground.

15. \_\_\_\_\_

Perform each indicated operation. Remember to insert units in your answers.

16. 70 cm + 4.4 m

16. \_\_\_\_\_

17. 7 km - 5830 m

17. \_\_\_\_\_

18.  $4 \cdot 17.2$  m

18. \_\_\_\_\_

19. Bettye has 15.9 meters of material. She can make 3 bridesmaids' dresses with the material she has. How much material will be used for each dress?

19. \_\_\_\_\_

20. Clara needs 50 centimeters of ribbon to make a bow. How many bows can she make out of 8 meters of ribbon?

20. \_\_\_\_\_

Name:  
Instructor:

Date:  
Section:

## Additional Exercises 7.6

Convert as indicated.

1. 48 oz. to pounds
2. 3.5 tons to pounds
3.  $3\frac{3}{4}$  pounds to ounces
4. 1400 pounds to tons
5. 65 oz. = \_\_\_\_\_ lb. \_\_\_\_\_ oz.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Perform each indicated operation.

6. 18 lb. 10 oz. + 15 lb. 10 oz.
7. 8 tons 750 lb. - 3 tons 850 lb.
8. 5 tons 400 lb.  $\div$  5
9. A bottle of cranberry juice contains 12.5 ounces of juice. A recipe for punch requires 52 ounces of cranberry juice. Will a 4-pack of juice be enough to make the punch?
10. A coal mine produced 1 ton 1500 pounds of coal each of 2 days. How much coal did the mine produce?

6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

Convert as indicated.

11. 480 g to kilograms
12. 5.7 g to milligrams
13. 170 mg to grams
14. 6.5 g to kilograms
15. 9.1 kg to grams

11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_
14. \_\_\_\_\_
15. \_\_\_\_\_

Perform each indicated operation.

16. 5.1 g + 170 mg.
17. 8 kg - 200 g
18. A can of spaghetti sauce weighs 751 grams. How many kilograms would a case of 6 cans of sauce weigh?
19. 1.25 mg  $\div$  5
20. A box of oatmeal weighs 517 grams and has 8 servings. How much does each serving weigh to the nearest tenth of a gram?

16. \_\_\_\_\_
17. \_\_\_\_\_
18. \_\_\_\_\_
19. \_\_\_\_\_
20. \_\_\_\_\_

# Additional Exercises 7.7

Convert as indicated.

1. 6 cups to pints

1. \_\_\_\_\_

2. 4 quarts to pints

2. \_\_\_\_\_

3. 12 pt to gallons

3. \_\_\_\_\_

4.  $3\frac{1}{4}$  gal to quarts

4. \_\_\_\_\_

5. 82 pt = \_\_\_\_\_ gal \_\_\_\_\_ qt

5. \_\_\_\_\_

Perform each indicated operation.

6. 1 gal 2 qt + 2 gal 3 qt

6. \_\_\_\_\_

7. 1 gal 2 qt - 3 qt

7. \_\_\_\_\_

8.  $4 \times 1\text{c } 3\text{ oz}$

8. \_\_\_\_\_

9. 6 gal 2qt  $\div$  2

9. \_\_\_\_\_

10. An oil drum holds 24 gallons of oil. If it takes 4 quarts to service a car, how many cars can be serviced with 1 oil drum?

10. \_\_\_\_\_

Convert as indicated.

11. 6.2 L to milliliters

11. \_\_\_\_\_

12. 0.0073 Kiloliters to liters

12. \_\_\_\_\_

13. 1800 ml to liters

13. \_\_\_\_\_

14. 0.5 kl to liters

14. \_\_\_\_\_

15. 25 liters to kl

15. \_\_\_\_\_

Perform each indicated operation. Remember to insert units in your answers.

16. 2000 ml + 1.6 l

16. \_\_\_\_\_

17. 8.1 kl - 2900 l

17. \_\_\_\_\_

18.  $2 \times 420\text{ ml}$

18. \_\_\_\_\_

19.  $6.8\text{ l} \div 2$

19. \_\_\_\_\_

20. Carol Shumacher drank 180 ml of cola from a 2-liter bottle. How much cola remains in the bottle.

20. \_\_\_\_\_



- |                          |                            |                       |
|--------------------------|----------------------------|-----------------------|
| 1. Trinomial             | 25. 35                     | 49. $x^2 - x - 6$     |
| 2. Binomial              | 26. -1                     | 50. $6x^2 - 17x + 12$ |
| 3. None of these         | 27. $x^7$                  | 51. $12a^2 + 14a + 4$ |
| 4. Trinomial             | 28. $x^{16}$               | 52. $12r^2 - 14r + 4$ |
| 5. Monomial              | 29. $b^5$                  | 53. $4x^2 + 12x + 9$  |
| 6. None of these         | 30. $12z^8$                | 54. $9z^2 - 12z + 4$  |
| 7. Monomial              | 31. $-20x^4y^8$            | 55. $24ft^3$          |
| 8. Binomial              | 32. $12x^6y^7$             | 56. $18m^3$           |
| 9. $-3x^2 + 2x - 1$      | 33. $x^{15}$               | 57. $200in^3$         |
| 10. $-w - 2$             | 34. $x^{18}$               | 58. $27mm^3$          |
| 11. $3z - 4$             | 35. $9a^8$                 |                       |
| 12. $4d^2 + 2d + 4$      | 36. $16d^{20}$             |                       |
| 13. $6x + 2$             | 37. $27a^9b^{12}$          |                       |
| 14. $-3y - 5$            | 38. $-12x^9$               |                       |
| 15. $-z + 1$             | 39. $200d^{23}$            |                       |
| 16. -6                   | 40. $108x^{14}y^{17}$      |                       |
| 17. $8x^2 - 5x + 1$      | 41. $4k - 12$              |                       |
| 18. $-w^3 + 11w^2 - 6w$  | 42. $-24r - 9q$            |                       |
| 19. $-2z^2 + 2z - 6$     | 43. $-4x - 4y + 12z$       |                       |
| 20. $9d^3 - d^2 + d - 4$ | 44. $5a + 30b - 10$        |                       |
| 21. -10                  | 45. $18x^3 - 9x$           |                       |
| 22. 1                    | 46. $8z^3 - 12z^2 + 20z$   |                       |
| 23. 1                    | 47. $18w^3 - 24w^2$        |                       |
| 24. -11                  | 48. $5y^6 - 25y^5 - 10y^4$ |                       |

**Chapter 7.5-7.7****7.5**

- 12,320 ft
- 1.5 mi
- 5 yd
- 3 yd 2 ft
- 13 yd
- 100 in
- 11 yd 1 ft
- 3 ft 5 in
- 11 yd
- $9\frac{3}{4}$  yd or 9.75 yd
- 7.5 mi
- km
- 0.342 dm
- 83 mm
- 85.5 cm
- 5.1 m or 510 cm
- 1170 m or 0.117 km
- 68.8 m
- 5.3 m
- 16 bows

**Additional Exercises****7.6**

- 3 lb
- 7000 lb
- 60 oz
- 0.7 tons
- 4 lb 4 oz
- 34 lb 4 oz
- 4 tons 1900 lb
- 12 lb 15 oz
- no
- 3 ton 1000 lb
- 0.48 kg
- 5700 mg
- 0.17 g
- 0.0065 kg
- 9100 g
- 5.27 g or 5270 mg
- 7.8 kg or 7800 g
- 4.506 kg
- 0.25 mg
- 64.6 g

**Answers (cont'd)****7.7**

- 3 pt
- 8 pt
- $1\frac{1}{2}$  gal
- 13 qt
- 10 gal 1 qt
- 4 gal 1 qt
- 3 qt
- 5 c 4 oz
- 3 gal 1 qt
- 6 cars
- 6200 ml
- 7.3 liters
- 1.8 l liters
- 500 liters
- 0.025 kl
- 3600 ml or 3.6 liters
- 5200 l or 5.2 kl
- 840 ml
- 3.4 l
- 1820 ml or 1.82 liters