UNIT 2 — The Nature of Algebraic Numbers

Exercises 2.1 Page 21

1. 2 2. 3 3. 1.5 4. $\frac{1}{2}$ 5. $\frac{3}{4}$ 6. .8

Exercises 2.2a Page 22

1. $p = 2a + 2b$
$p = 2 \times 4 + 2 \times 6$
$p = 8 + 12$
$p = 20$ inches

2. $p = 2a + 2b$
$p = 2 \times 3 + 2 \times 5$
$p = 6 + 10$
$p = 16$ feet

3. $p = 2a + 2b$
$p = 2 \times 10 + 2 \times 15$
$p = 20 + 30$
$p = 50$ meters

4. $p = 2a + 2b$
$p = 2 \times 5 + 2 \times 7$
$p = 10 + 14$
$p = 24$ yards

5. $p = 2a + 2b$
$p = 2 \times 1\frac{1}{2} + 2 \times 2\frac{1}{2}$
$p = 3 + 5$
$p = 8$ inches

6. $p = 2a + 2b$
$p = 2 \times 2\frac{1}{4} + 2 \times 3\frac{1}{4}$
$p = 4\frac{1}{2} + 6\frac{1}{2}$
$p = 11$ feet

7. $p = 2a + 2b$
$p = 2 \times 1.1 + 2 \times 4.1$
$p = 2.2 + 8.2$
$p = 10.4$ inches

8. $p = 2a + 2b$
$p = 2 \times 2 + 2 \times 4$
$p = 4 + 8$
$p = 12$ feet

9. $p = 2a + 2b$
$p = 2 \times 3 + 2 \times 6$
$p = 6 + 12$
$p = 18$ inches

10. $p = 2a + 2b$
$p = 2 \times 4 + 2 \times 8$
$p = 8 + 16$
$p = 24$ meters

Exercises 2.2b Pages 22-23

1. $p = a + b + c$
$p = 2 + 3 + 4$
$p = 9$ inches

2. $p = a + b + c$
$p = 5 + 6 + 3$
$p = 14$ feet

3. $p = a + b + c$
$p = 12 + 10 + 8$
$p = 30$ meters

4. $p = a + b + c$
$p = 15 + 13 + 11$
$p = 39$ yards

5. $p = a + b + c$
$p = 1\frac{1}{2} + 2\frac{1}{2} + 3$
$p = 7$ inches

6. $p = a + b + c$
$p = 3.1 + 4.1 + 2.1$
$p = 9.3$ feet

7. $p = a + b + c$
$p = 8 + 9 + 10$
$p = 27$ inches

8. $p = a + b + c$
$p = 12.1 + 13.1 + 10.1$
$p = 35.3$ meters

9. $p = a + b + c$
$p = 6\frac{1}{3} + 7\frac{1}{3} + 8\frac{1}{3}$
$p = 22$ yards

10. (a) monomial (b) trinomial (c) binomial

(d) binomial (e) trinomial (f) binomial

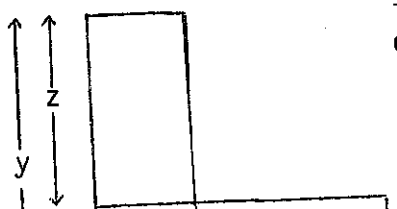
Key to Unit 2, pages 23-25

Exercises 2.3 Page 23

1. 6a
2. 14x
3. 7x
4. 0
5. 2a + 4b
6. 8x + y
7. 5s + 5t
8. 4c

Exercises 2.4 Page 24

1. 10 x 6 = 60 square inches;
   8 x 4 = 32 square feet
2. Multiply the base by the altitude; the product of the altitude and the base
3. 8 x 3 = 24; What is the value of the area when the altitude is 8 and the base is 3?
4. 9 x 7 = 63 square feet
5. 100; 2
6.



Since area equals base times height, the area of the vertical rectangle is xy, and the area of the horizontal rectangle is yx. Since the two rectangles are congruent, the areas are equal.

7. 5 x 0 = 0