Lesson 94 • Graphing Pairs of Inequalities on a Number Line

Power Up

– ***Facts***

– ***Mental Math***

– ***Problem Solving***

New Concepts

– ***Examples***

– ***Practice Set***

Written Practice

Facts U.S. Customary measurement facts: complete each equivalence.

Linear Measure:

1. 1 foot = 12 inches
2. 1 yard = 36 inches
3. 1 yard = 3 feet
4. 1 mile = 5280 feet
5. 1 mile = 1760 yards

Area:

6. 1 foot^2 = 144 inches^2
7. 1 yard^2 = 9 feet^2

Volume:

8. 1 yard^3 = 27 feet^3

Weight:

9. 1 pound = 16 ounces
10. 1 ton = 2000 pounds

Liquid Measure:

11. 1 pint = 16 ounces
12. 1 pint = 2 cups
13. 1 quart = 2 pints
14. 1 gallon = 4 quarts

Temperature:

15. Water freezes at 32 °F.
16. Water boils at 212 °F.
17. Normal body temperature is 98.6 °F.

Customary to Metric:

18. 1 inch = 2.54 centimeters

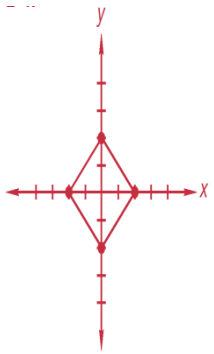
Written Practice

1. 70,000

2. 30%

3. 12 ft

4. $\frac{1}{4}$

5. a. 

b. 90°, 180°, 270°, etc.

6. a. $2\sqrt{2}$ units

b. 8 units^2

7. x is less than −1 or greater than or equal to 0.

8. a. {5, 10, 15, 20, 25, 30, 35, 40, 45}

b. {15, 30, 45}

9. $x^2 + 20x + 100$

10. $x^2 - 20x + 100$

11. $x^2 - 100$

Written Practice *continued*

12. 120 units^2

13. $A = 4x^2 - 8x + 4$, $P = 8x - 8$

14. a. 12 in.^{2}

b. π in.^{2}

c. $\frac{\pi}{12}$; $\frac{\pi}{12}$ is a little more than $\frac{1}{4}$ because $\frac{3}{12}$ is $\frac{1}{4}$ and π is a little more than 3.

15. $8\sqrt{3}$

16. ± 7

17. C. If the triangle were right, the hypotenuse would measure $\sqrt{13}$ in. or about 3.6 in. Since the longest side of Cheryl's triangle is greater than $\sqrt{13}$ in., the largest angle is greater than 90°.

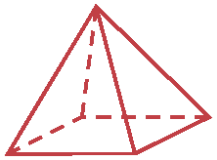
Written Practice *continued*

18. $\frac{8 \text{ qt}}{1 \text{ hr}} \cdot \frac{4 \text{ c}}{1 \text{ qt}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} = \frac{8}{15}$ c/min, 2 min.

19. a. $5(x^2 - 5x + 12)$

b. $-9x^2 + 3x$

20. a. 85 square units

b. 

21. a. 1.5

b. Sample answer: I could multiply the perimeter by 1.5 to find the perimeter of the larger trapezoid.

22. 2.25; Sample answer: Since the scale factor is 1.5, I can square 1.5 to find the ratio of the areas: $1.5^2 = 2.25$.

Written Practice

continued

23. 125%

24. a. $266\frac{2}{3}\%$

b. $2.\overline{6}$

c. 2.67

25. $x = 90$