Practice 7-1
Areas of Parallelograms and Triangles

Find the area of each triangle, given the base \( b \) and the height \( h \).

1. \( b = 4, h = 4 \) \( \frac{1}{2} \times 4 \times 4 = 8 \)
2. \( b = 8, h = 2 \) \( \frac{1}{2} \times 8 \times 2 = 8 \)
3. \( b = 20, h = 6 \) \( \frac{1}{2} \times 20 \times 6 = 60 \)
4. \( b = 40, h = 12 \) \( \frac{1}{2} \times 40 \times 12 = 240 \)
5. \( b = 3.1, h = 1.7 \) \( \frac{1}{2} \times 3.1 \times 1.7 = 2.635 \)
6. \( b = 4.8, h = 0.8 \) \( \frac{1}{2} \times 4.8 \times 0.8 = 1.92 \)
7. \( b = 3\frac{1}{4}, h = \frac{5}{2} \) \( \frac{1}{2} \times 3\frac{1}{4} \times \frac{5}{2} = 8.125 \)
8. \( b = 8, h = 2\frac{3}{4} \) \( \frac{1}{2} \times 8 \times 2\frac{3}{4} = 9 \)
9. \( b = 100, h = 30 \) \( \frac{1}{2} \times 100 \times 30 = 1500 \)

Find the value of \( h \) in each parallelogram.

10. \( \frac{8}{10} = \frac{3.44}{5} \)
11. \( \frac{8.75}{4.3} = \frac{3.44}{5} \)
12. \( \frac{11}{14} = \frac{3.44}{5} \)

13. What is the area of \( \square ABCD \) with vertices \( A(-4, -6), B(6, -6), C(-1, 5) \), and \( D(9, 5) \)?

14. What is the area of \( \triangle DEF \) with vertices \( D(-1, -5), E(4, -5) \), and \( F(4, 7) \)?

Find the area of the shaded region.

15. \( \frac{1}{2} \times 8 \times 5 = 20 \)
16. \( \frac{1}{2} \times 11 \times 14 = 77 \)
17. \( \frac{1}{2} \times 4 \times 13 = 26 \)

Find the area of each parallelogram.

18. \( \frac{1}{2} \times 4 \times 2 = 4 \)
19. \( \frac{1}{2} \times 4 \times 2 = 4 \)
20. \( \frac{1}{2} \times 4 \times 2 = 4 \)

Lesson 7-1 Practice
Geometry Chapter 7
**Practice 7-4**

**Areas of Trapezoids, Rhombuses, and Kites**

Find the area of each trapezoid.

1. \( \frac{48}{cm^2} \)
   \[ \frac{6 \text{ cm}}{10 \text{ cm}} \]

2. \( \frac{78.4}{in^2} \)
   \[ \frac{22 \text{ in.}}{34 \text{ in.}} \]

3. \( \frac{11.4}{ft^2} \)
   \[ \frac{4.4 \text{ ft}}{3 \text{ ft}} \]

Find the area of each rhombus.

4. \( \frac{90}{m^2} \)
   \[ \frac{9 \text{ m}}{5 \text{ m}} \]

5. \( \frac{2400}{in^2} \)
   \[ \frac{40 \text{ in.}}{60 \text{ in.}} \]

6. \( \frac{374}{ft^2} \)
   \[ \frac{17 \text{ ft}}{7 \text{ ft}} \]

Find the area of each kite.

7. \( \frac{160}{cm^2} \)
   \[ \frac{8 \text{ cm}}{8 \text{ cm}} \]

8. \( \frac{176.25}{in^2} \)
   \[ \frac{18 \text{ in.}}{7.5 \text{ in.}} \]

9. \( \frac{54}{ft^2} \)
   \[ \frac{6 \text{ ft}}{6 \text{ ft}} \]

Find the area of each trapezoid. Leave your answers in simplest radical form.

10. \( \frac{42.5}{\text{sq. units}} \)
    \[ \frac{6}{11} \]

11. \( \frac{96\sqrt{3}}{\text{sq. units}} \)
    \[ \frac{60^\circ}{19} \]

12. \( \frac{14}{\text{sq. units}} \)
    \[ \frac{60^\circ}{11} \]

Find the area of each trapezoid to the nearest tenth.

13. \( \frac{45}{cm^2} \)
    \[ \frac{7 \text{ cm}}{11 \text{ cm}} \]

14. \( \frac{226.2}{in^2} \)
    \[ \frac{20.6 \text{ in.}}{13 \text{ in.}} \]

15. \( \frac{36\sqrt{3}}{m^2} \)
    \[ \frac{49,500}{350 \text{ m}} \]

---

**Geometry Chapter 7**
Areas of Regular Polygons

Find the values of the variables for each regular hexagon. Leave your answers in simplest radical form.

1. \( \frac{7}{x} \)
2. \( \frac{8\sqrt{3}}{c} \)
3. \( \frac{8\sqrt{3}}{3} \)

Each regular polygon has radii and an apothem as shown. Find the measure of each numbered angle.

4.
5.
6.

Find the area of each equilateral triangle, given the radius. Leave your answers in simplest radical form.

7. \( \frac{10\sqrt{3}}{2} \)
8. \( \frac{10\sqrt{3}}{2} \)

Find the area of each regular polygon to the nearest square inch.

9. \( 76\sqrt{3} \)
10. \( 120 \text{ in}^2 \)
11. \( 137 \text{ in}^2 \)
12. \( 97 \text{ in}^2 \)
34. The diagram below shows the dimensions of a wall that needs to be painted. The door represented by the shaded rectangle is not to be painted.

In your **Answer Document**, determine the area, to the nearest square foot, of the wall that is to be painted. Show your work or provide an explanation for your answer.

\[ A = A_{\text{triangle}} + A_{\text{trap}} + A_{\text{big rect.}} - A_{\text{little rect.}} \]

\[ A = 10 + 27 + 198 - 21 \]

\[ A = 214 \text{ units squared} \]
Section 7-6: Circles and Arcs

CIRCLE--- set of all points equidistant from a given point (CENTER)  

RADIUS--- segment with one endpoint on the center and the other on the circle  
\[ r = \frac{d}{2} \]

DIAMETER--- segment that contains the circle’s center and has both endpoints on the circle  
\[ d = 2r \]

CENTRAL ANGLE--- angle whose vertex is the circle’s center
-equal in measure to its intercepted arc

SEMICIRCLE--- a 180° arc

MINOR ARC--- arc smaller than a semicircle

MAJOR ARC--- arc larger than a semicircle
ADJACENT ARCS--- arcs that have exactly one point in common

CIRCUMFERENCE--- distance around a circle
- $\pi d$ or $2\pi r$

CONCENTRIC CIRCLES--- circles that lie in the same plane and have the same center

ARC LENGTH--- fraction of a circle’s circumference

\[
\text{length of } \overline{AB} = \frac{\text{mAB}}{360^\circ} \times \text{circumference}
\]
Arc length of XY.

\[ \frac{90}{360}(16\pi) \]

\[ \frac{1}{4}(16\pi) \]

\[ 4\pi \text{ in} \]

exact
arc length $XY$.

$\frac{120}{360}(30\pi) = \frac{1}{3}(30\pi) = \frac{10\pi}{3}$ cm
pg. 389: 1-8 (all), 9-65 (odd), 72