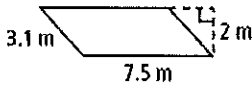


10-1 Practice Form G
Areas of Parallelograms and Triangles

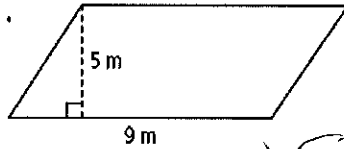
Find the area of each parallelogram.

1.



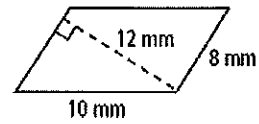
$A = (7.5)(2) = 15 \text{ m}^2$

2.



$A = 9(5) = 45 \text{ m}^2$

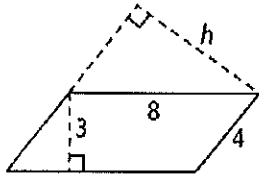
3.



$A = (8)(12) = 96 \text{ mm}^2$

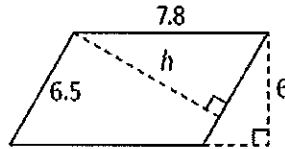
Find the value of h for each parallelogram.

4.



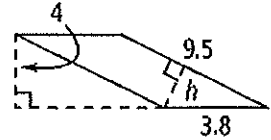
$A = 8(3) = 4h$
 $24 = 4h$
 $h = 6$

5.



$A = 6.5(h) = 6(7.8)$
 $6.5h = 46.8$
 $h = 7.2$

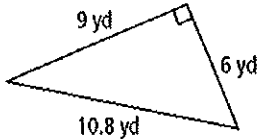
6.



$3.8(4) = 9.5h$
 $15.2 = 9.5h$
 $h = 1.6$

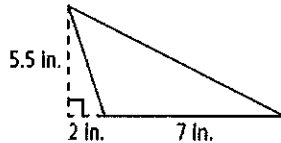
Find the area of each triangle.

13.



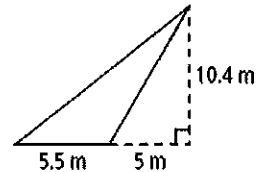
$A = \frac{1}{2}(6)(9) = 27 \text{ yd}^2$

14.



$A = \frac{1}{2}(7)(5.5) = 19.25 \text{ in}^2$

15.



$A = \frac{1}{2}(11)(10.4) = 57.2 \text{ m}^2$

16. **Algebra** In a parallelogram, a base, b , and its corresponding height, h , are in the ratio of 5 : 3. The area is 135 mm^2 . Find b and h .

$A = bh$ $135 = 5x(3x)$
 $135 = 15x^2$ $x^2 = 9$

$b = 5(3) = 15 \text{ mm}$
 $h = 3(3) = 9 \text{ mm}$

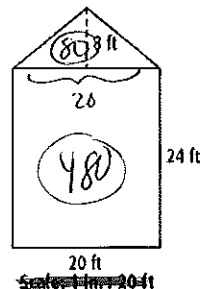
17. **Reasoning** A triangle has an area of 18 ft^2 . List all the possible positive integers that could represent its base and height.

$A = \frac{1}{2}bh$
 $18 = \frac{1}{2}bh$
 $36 = bh$

b	h
1	36
2	18
3	12
4	9
6	6

19. A scale drawing of the side view of a house is shown at the right. Find the total area (in square inches) of the side of the house in the drawing.

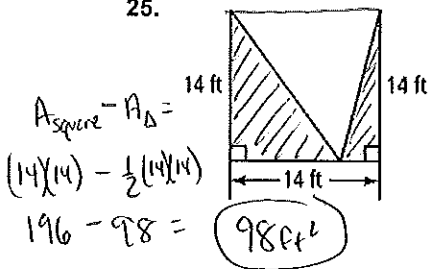
$80 + 480 = 560 \text{ ft}^2$



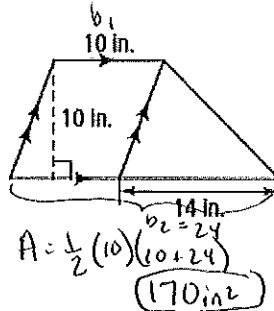
Scale: 1 in = 20 ft

Find the area of each figure.

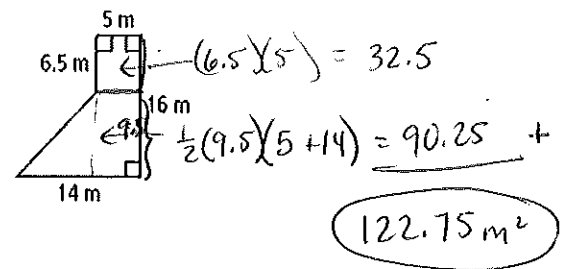
25.



26.



27.

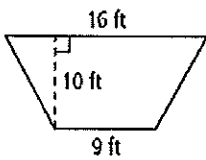


ANSWERS 10.1 1)15 2)45 3)96 4)6 5)7.2 6)1.6 13)27 14)19.25 15)28.6 16)15 and 9 17)1&36, 2&18, 3&12, 4&9 19)1.4 25)98 26)170 27)122.75

10-2

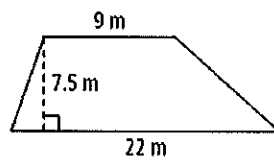
Find the area of each trapezoid.

1.

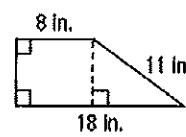


A =

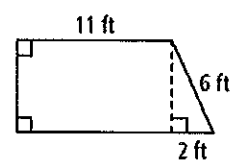
2.



3.

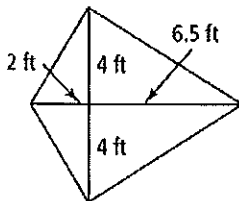


4.

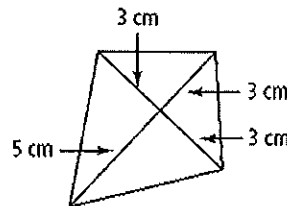


Find the area of each kite.

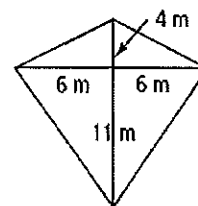
9.



10.

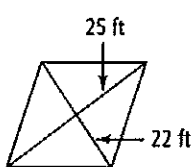


11.

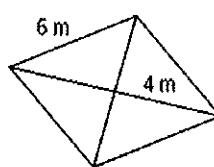


Find the area of each rhombus.

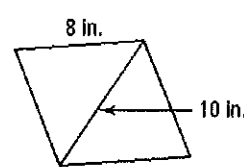
14.



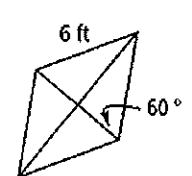
15.



16.



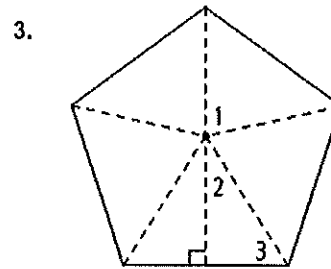
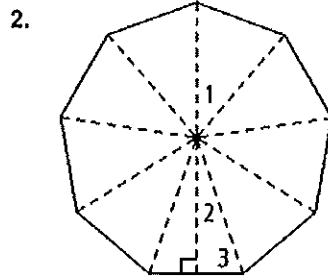
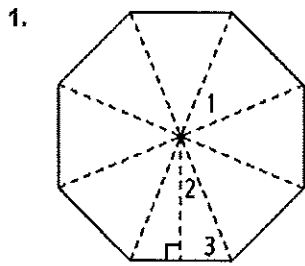
17.



ANSWERS 10.2 1)125 2)116.25 3)13root21 4)48root2 9)34 10)24 11)90 14)1100 15)16root5 16)10root39 17)18root3

10-3

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



Find the area of each regular polygon with the given apothem a and side length s .

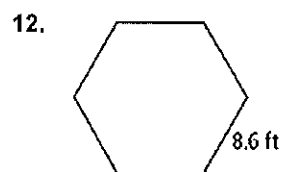
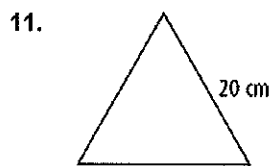
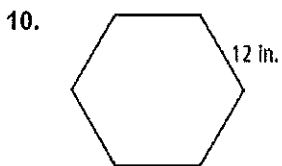
6. octagon, $a = 20.8$ m, $s = 17.2$ m

7. nonagon, $a = 50.9$ m, $s = 37$ m

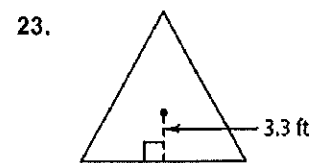
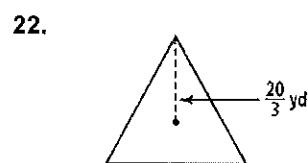
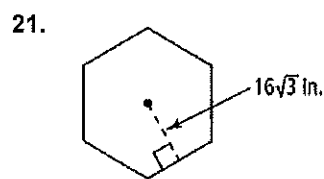
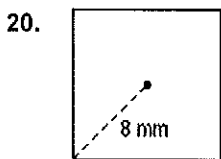
8. decagon, $a = 31$ in., $s = 20.1$ in.

9. dodecagon, $a = 40.6$ m, $s = 21.7$ m

Find the area of each regular polygon. Round your answer to the nearest tenth.



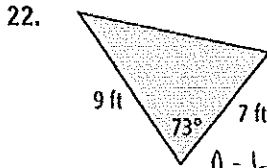
Find the area of each regular polygon with the given radius or apothem. If your answer is not an integer, round to the nearest hundredth.



ANSWERS 10.3 1)45, 22.5, 67.5 2)40, 20, 70 3)72, 36, 54 6)1431.04 7)8474.85 9)5286.12 10)374.1 11)173.2
12)192.2 20)128 21)1536root3 22)100root3/3 23)32.67root3

Lesson 10-5

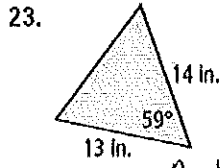
Find the area of each polygon. Round your answers to the nearest tenth.



$$A = \frac{1}{2}bc \sin A$$

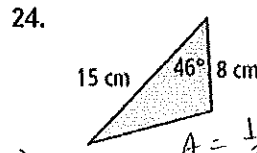
$$\frac{1}{2}(9)(7)(\sin 73)$$

30.1 ft²



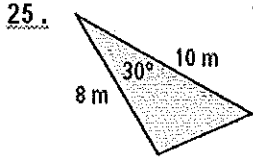
$$A = \frac{1}{2}(13)(14)(\sin 59)$$

78 m²



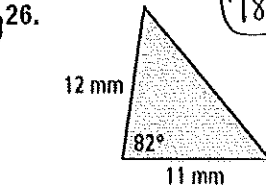
$$A = \frac{1}{2}(15)(8)(\sin 46)$$

43.2 cm²



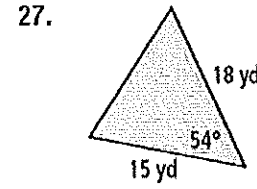
$$A = \frac{1}{2}(8)(10)(\sin 30)$$

20 m²



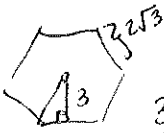
$$A = \frac{1}{2}(12)(11)(\sin 82)$$

65.4 mm²



$$\frac{1}{2}(15)(18)(\sin 54)$$

109.2 yd²



28. a regular hexagon with an apothem of 3 ft

$$p = 12\sqrt{3}$$

$$3 = s \frac{\sqrt{3}}{2} \quad s = 2\sqrt{3}$$

$$A = \frac{1}{2}(3)(12\sqrt{3})$$

18\sqrt{3} ft²

29. a regular octagon with radius 5 ft

$$\frac{360}{8} = 45 \quad \frac{45}{2} = 22.5$$

$$\sin 22.5 = \frac{y}{5}$$

$$\cos 22.5 = \frac{x}{5}$$

$$x = a = 4.6 \quad y = 1.9$$

$$A = \frac{1}{2}(4.6)(30.4) P = 30.4$$

69.92 ft²

8. If the area of a parallelogram is 224 in² and the height is 14 in, what is the base?

$$A = bh$$

$$224 = b(14)$$

b = 16 in

9. If the area of a trapezoid is 108 m². It has a base 15 m and the other base is 12 m. What is the height?

$$A = \frac{1}{2}h(b_1 + b_2)$$

$$108 = \frac{1}{2}h(15 + 12)$$

$$216 = 27h$$

h = 8 m

10. If the area of a triangle is 143 in². It has a base 22 in. What is the height?

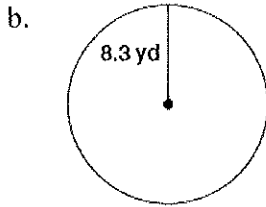
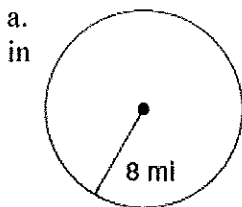
$$A = \frac{1}{2}bh$$

$$143 = \frac{1}{2}(22)h$$

h = 13 in

10.6-10.7

11. Find the circumference and area of each. Leave answers in exact terms AND rounded to nearest tenth.



c. diameter = 14 m

$$r = 7$$

g. diameter = 21.3

$$r = 10.65$$

C = exact = $16\pi \approx 50.3$ mi exact = $16.6\pi \approx 52.2$ yd exact = $14\pi \approx 44.0$ m exact = $21.3\pi \approx 66.9$ in

A = exact = $64\pi \approx 201.1$ mi² exact = $68.89\pi \approx 216.4$ yd² exact = $49\pi \approx 153.9$ m² exact = $113.4\pi \approx 356.3$ in²

12. Find the radius of each circle:

a. Area = $64\pi \text{ in}^2$

$$\pi r^2 = 64\pi$$

$$r^2 = 64$$

$$r = 8 \text{ in}$$

b. Circumference = $84\pi \text{ ft}$

$$2\pi r = 84\pi$$

$$r = 42 \text{ ft}$$

13. Find the circumference of the circle. Leave your answer in terms of π .

a. area = $64\pi \text{ mi}^2$

$$\pi r^2 = 64\pi$$

$$r = 8$$

$$C = 2\pi(8) = 16\pi \text{ mi}$$

b. area = $36\pi \text{ mi}^2$

$$\pi r^2 = 36\pi$$

$$r = 6$$

$$C = 2\pi(6) = 12\pi \text{ mi}$$

14. Find the area of each circle. Leave your answer in terms of π .

a. circumference = $22\pi \text{ in}$

$$2\pi r = 22\pi$$

$$r = 11$$

$$A = 121\pi \text{ in}^2$$

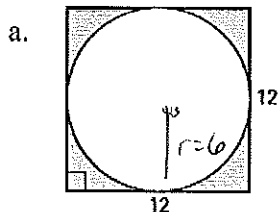
b. circumference = $10\pi \text{ in}$

$$2\pi r = 10\pi$$

$$r = 5$$

$$A = 25\pi \text{ in}^2$$

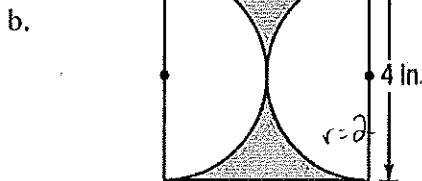
15. Find the area of the shaded regions.



$$A_{sq} - A_{\circ}$$

$$144 - 36\pi$$

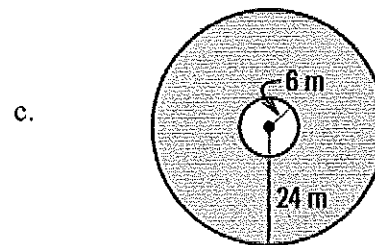
$$30.9$$



$$A_{sq} - A_{\circ}$$

$$16 - 4\pi$$

$$3.4 \text{ m}^2$$



$$A_{\circ} - A_{\circ}$$

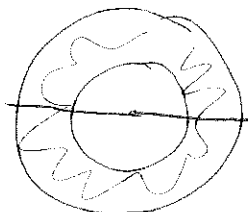
$$r=24 \quad r=6$$

$$576\pi - 36\pi$$

$$540\pi \text{ m}^2$$

$$\approx 1696.5 \text{ m}^2$$

16. Charlie has a circular carpet in his drawing room. He wants to put a table in middle of the carpet. The diameter of the carpet is 12 meters and the diameter of the table is 4 meters. Calculate how much area of carpet is left after putting table the table in the place. Leave your answer in terms of π .



$$r=6 \quad r=2$$

$$36\pi - 4\pi = 32\pi \text{ m}^2$$

17. Maya makes a round pizza. She wants to put a cheese layer on the pizza. If the flattened pie dough is 8 cm in diameter, how many square cm of cheese layer does she need to put on the pizza? Round your final answer to the nearest hundredth.

$$r=4$$

$$16\pi = 50.27 \text{ cm}^2$$