

Practice 43

Areas of Polygons

Lessons 11-1 through 11-4

Find the area of each polygon.

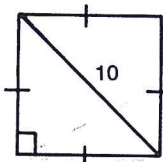
1. A rectangle with sides 7 m and 5 m 35 m²2. A rectangle with one side 9 cm and with perimeter 34 cm 72 cm²3. An equilateral triangle with sides of length 12 36√3 u²4. A parallelogram with base 11 and corresponding height 7 77 u²5. A rhombus with diagonals 10 cm and 12 cm 60 cm²6. A trapezoid with bases 7 cm and 13 cm, and height 6 cm 60 cm²

7. Complete for a regular hexagon with side 18.

measure of a central angle = 60°radius = 18apothem = 9√3area = 486√3 u²

Find the area of each of the following.

8.



$$10 = x\sqrt{2}$$

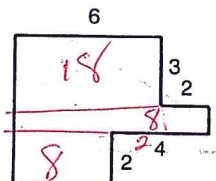
$$\frac{10\sqrt{2}}{\sqrt{2}} = \frac{x\sqrt{2}}{\sqrt{2}}$$

$$10\sqrt{2} = x$$

$$(5\sqrt{2})^2$$

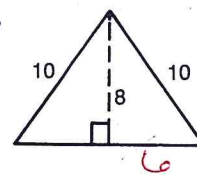
$$A = \underline{50 u^2}$$

9.

Consecutive sides are $\perp$.

$$A = \underline{34 u^2}$$

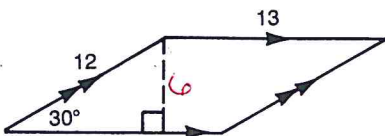
10.



$$\frac{1}{2}(12)(8)$$

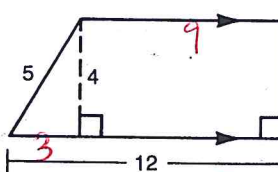
$$A = \underline{48 u^2}$$

11.



$$A = \underline{78 u^2}$$

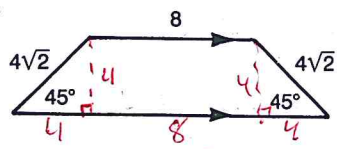
12.



$$A = \underline{42 u^2}$$

$$\frac{1}{2}(4)(9+12)$$

13.



$$\text{hyp} = \text{leg}\sqrt{2}$$

$$4\sqrt{2} = h\sqrt{2}$$

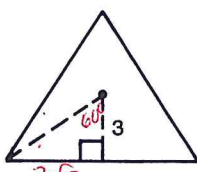
$$4 = h$$

$$A = \underline{48 u^2}$$

$$\frac{1}{2}(4)(8+16)$$

Find the area of each regular polygon. The apothem and radius are shown.

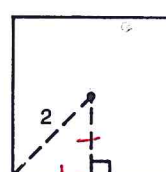
14.



$$\frac{1}{2}(3)(6\sqrt{3})(3)$$

$$A = \underline{27\sqrt{3} u^2}$$

15.



$$A = \underline{8 u^2}$$

$$(2\sqrt{2})^2$$

$$\text{hyp} = \text{leg}\sqrt{2}$$

$$2 = x\sqrt{2}$$

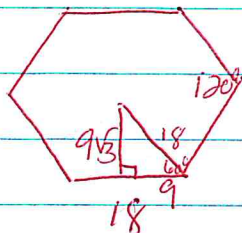
$$\frac{2}{\sqrt{2}} = \frac{x\sqrt{2}}{\sqrt{2}}$$

$$\frac{2}{\sqrt{2}} = x$$

$$\sqrt{2} = x$$

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7.) Hex. w/ side 18



$$\frac{180(6-2)}{6} = 120$$

$$A = \frac{1}{2} a s n$$
$$A = \frac{1}{2} (9\sqrt{3}) (18) (6)$$
$$= 486\sqrt{3}$$