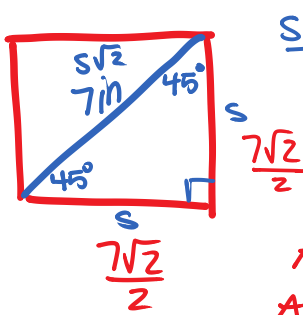


10.1-10.3 Geometry Review

Names:

1. Find the area of a square with a diagonal length of 7 inches. (10.1)



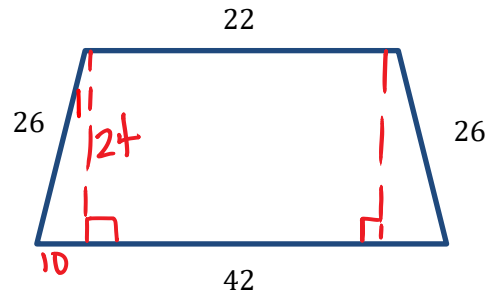
$$\frac{s\sqrt{2}}{\sqrt{2}} = \frac{7}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{7\sqrt{2}}{2}$$

$$A = s^2$$

$$A = \left(\frac{7\sqrt{2}}{2}\right)^2 = \frac{49 \cdot 2}{4} = 24.5 \text{ in}^2$$

$$A = 24.5 \text{ in}^2$$

2. Find the area of the isosceles trapezoid. (10.1)



$$A = \frac{b_1 + b_2}{2} \cdot h$$

$$= \frac{(22 + 10)}{2} \cdot 24 = 768 \text{ u}^2$$

3. Find the area of a rhombus with diagonal lengths $(2x + 5)$ cm and $(5x - 11)$ cm. (10.1)

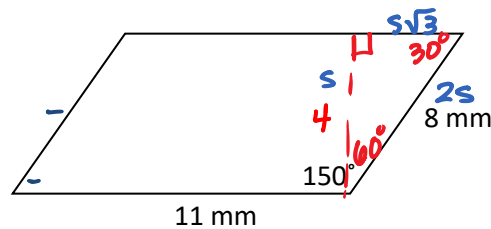
$$A_{\text{rhomb}} = \frac{d_1 \cdot d_2}{2}$$

$$A = \frac{(2x+5)(5x-11)}{2}$$

$$A = \frac{10x^2 - 22x + 25x - 55}{2}$$

$$A = \frac{10x^2 + 3x - 55}{2} = 5x^2 + 1.5x - 27.5 \text{ cm}^2$$

4. Find the area of the parallelogram. (10.1)



$$A = b \cdot h$$

$$A = 11(4)$$

$$A = 44 \text{ mm}^2$$

4. Find the area of the circle with a circumference of 24π . (10.2)

$$\pi d = 24\pi$$

$$d = 24$$

$$r = 12$$

$$A = \pi r^2 = \pi(12)^2$$

$$A = 144\pi$$

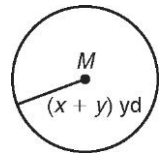
6. Find the circumference of $\odot M$. (10.2)

$$C = 2\pi r$$

$$C = 2(x+y)\pi$$

$$C = (2x+2y)\pi \text{ yd}$$

$$C = 2\pi x + 2\pi y \text{ yd}$$



7. Find the circumference of a circle given the area is $196x^2\pi$. (10.2)

$$\pi r^2 = 196x^2\pi$$

$$r^2 = 196x^2$$

$$r = 14x$$

$$d = 28x$$

$$C = 28\pi x \text{ units}$$

8. Find the area of an equilateral triangle with a perimeter of 18 cm. (10.2)

$$A_{\triangle} = \frac{s^2\sqrt{3}}{4}$$

$$S = \frac{18}{3} = 6$$

$$A_{\triangle} = \frac{6^2\sqrt{3}}{4} = \frac{36\sqrt{3}}{4}$$

$$A_{\triangle} = 9\sqrt{3} \text{ cm}^2$$

9. Find the exact area of the regular polygon. (10.2)

Central $\angle = \frac{360}{6} = 60^\circ$

$\frac{18}{\sqrt{3}} = \frac{18\sqrt{3}}{3} = 6\sqrt{3}$

Perimeter = $6(12\sqrt{3}) = 72\sqrt{3}$

$A = \frac{a \cdot p}{2}$

$A = \frac{18(72\sqrt{3})}{2} = \boxed{648\sqrt{3} \text{ in}^2}$

10. Find the exact area of the regular polygon. (10.2)

Cent. $\angle = \frac{360}{5} = 72^\circ$

① Find apothem: $6 \cdot \cos 36^\circ = \frac{x}{6} \cdot 6$

$6 \cdot \cos 36^\circ = x$

$x \approx 4.85$ (apothem)

② Find side: $\sin 36^\circ = \frac{y}{6}$

$y = 6 \cdot \sin 36^\circ = 3.53$

③ $P = 5(7.05) = 35.27$

④ $A = \frac{a \cdot p}{2} = \frac{4.85(35.27)}{2} = \boxed{85.52 \text{ m}^2}$

11. Find the exact area of a regular decagon with an apothem that measures 8 inches. (10.2)

Cent. $\angle = \frac{360}{10} = 36^\circ$

① Find Side: $\tan 18^\circ = \frac{x}{8}$

$x = 8 \tan 18^\circ$

$x \approx 2.60$

② Perimeter = 52.00

③ $A = \frac{a \cdot p}{2} = \frac{8(52)}{2} = \boxed{208 \text{ in}^2}$

12. Find the exact area of the shaded region. (10.3)

① $A_{\square} = 10^2 = 100 \text{ cm}^2$

② $A_{\circ} = \pi r^2$

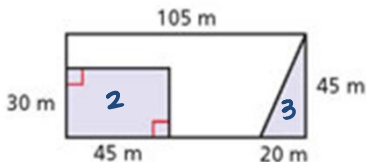
$= \pi(5)^2$

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

$A_F = A_{\square} - A_{\circ}$

$A_F = (100 - 25\pi) \text{ cm}^2$

13. Find the area of the unshaded part of the rectangle. (10.3)



① $A_{\square} = b \cdot h = 45(105) = 4,725$

② $A_{\square} = b \cdot h = 45(30) = 1,350$

③ $A_{\Delta} = \frac{b \cdot h}{2} = \frac{45(20)}{2} = 450$

④ $A_F = 4,725 - (1,350 + 450)$

$A = \boxed{2,925 \text{ m}^2}$

14. Find the exact measure of the figure below. (10.3)

① $A_{\Delta} = \frac{s^2\sqrt{3}}{4}$

$= \frac{10^2\sqrt{3}}{4}$

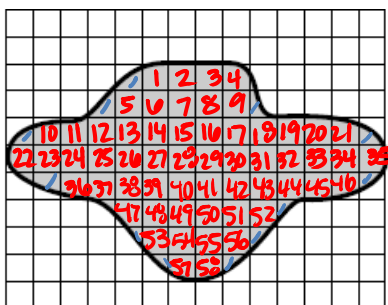
$A_{\Delta} = 25\sqrt{3} \text{ in}^2$

② $3 \cdot A_{\circ} = \frac{\pi r^2}{2} = \frac{\pi(5)^2}{2} = 12.5\pi$

$3(12.5\pi) = 37.5\pi \text{ in}^2$

③ $A_F = 25\sqrt{3} + 37.5\pi \text{ in}^2$

15. Estimate the area of the figure. (10.3)



$A = \text{about } 64 \text{ ft}^2$

16. Use the grid on the map of Lake Superior to estimate the area of the surface of the lake. Each square on the grid has a side length of 100 miles. (10.3)

$100 \times 100 = 10,000$



$A = 10,000(3.5) = \boxed{\text{about } 35,000 \text{ mi}^2}$