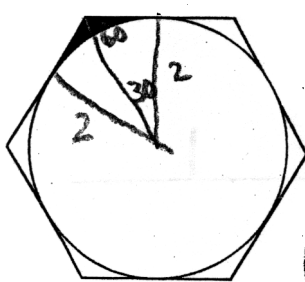


4. Find the probability of a randomly thrown dart landing in the region where a circle with radius of 2 units is inscribed in a regular hexagon. Assume that all darts land in the interior of the regular hexagon.

$$4. \frac{6 - \pi\sqrt{3}}{36}$$



$$A = \frac{1}{2} \cdot 2\sqrt{3} \cdot 2 = 2\sqrt{3}$$

$$A = \frac{1}{6} \cdot 4\pi = \frac{2\pi}{3}$$

$$\frac{\left(\frac{4}{\sqrt{3}} - \frac{2\pi}{3}\right) 3\sqrt{3}}{\left(\frac{24}{\sqrt{3}}\right) 3\sqrt{3}} = \frac{12 - 2\sqrt{3}\pi}{72} = \frac{6 - \sqrt{3}\pi}{36}$$

5. Find all real solutions of the equation:

$$5. \frac{1 + \sqrt{29}}{2}$$

$$5 \log_2(x+2) = -5 \log_2(x-3)$$

$$5 \log_2(x+2) + 5 \log_2(x-3) = 0$$

$$5 (\log_2(x+2)(x-3)) = 0$$

$$\log_2(x^2 - x - 6) = 0$$

$$x^2 - x - 6 = 1$$

$$x^2 - x - 7 = 0$$

$$x = \frac{\pm \sqrt{1 - (-28)}}{2}$$

$$x = \frac{1 \pm \sqrt{29}}{2}$$

Can only use positive value

6. The local Fish market is having a sale on whole Fish. The following specials are being offered:

$$6. 911$$

- An albacore and a barracuda for \$21
- A barracuda and a carp for \$24
- A carp and a dogfish for \$32
- A dogfish and an eel for \$37
- An eel and a flounder for \$31
- A flounder and a gar for \$25
- A gar and an albacore for \$26

Based on these specials determine the cost of a flounder.

$$2A + 2B + 2C + 2D + 2E + 2F + 2G = 196$$

$$\underbrace{A+B}_{21} + \underbrace{C+D}_{32} + \underbrace{E+F+G}_{31} = 98$$

$$\begin{aligned} G &= 14 \\ E + G &= 25 \\ F &= 11 \end{aligned}$$