$$i^{58} = i^{2\cdot 29} = (i^2)^{29} = (-1)^{29} = -1$$

$$2^5\cdot 3^2\cdot 7\cdot 11^3 = ?$$

Factored into the product of powers of primes.

2,683,296

$$\begin{array}{r|l}
2 & 2683296 \\
2 & 1341648 \\
2 & 670824 \\
2 & 335412 \\
2 & 167706 \\
3 & 83853 \\
3 & 27951 \\
7 & 9317 \\
11 & 1331 \\
11 & 121 \\
 & 11
\end{array}$$

2, 3, 5, 7, 11, 13, 17, 19, 23, 29,
31, 37, 41

$$2^5\cdot 3^2\cdot 7\cdot 11^3$$

$$\begin{array}{r} {}^{1}33 \\ 4 \\ \hline 132 \end{array}$$

$$\sqrt[2]{2683296}$$
$$= \sqrt{2^5\cdot 3^2\cdot 7\cdot 11^3}$$
$$= \sqrt[2]{2^4\cdot 2^1\cdot 3^2\cdot 7^1\cdot 11^2\cdot 11^1}$$
$$= 2^{\frac{4}{2}}\cdot 3^{\frac{2}{2}}\cdot 11^{\frac{2}{2}}\sqrt{2\cdot 7\cdot 11}$$
$$= 2^2\cdot 3\cdot 11\sqrt{154}$$
$$= 132\sqrt{154}$$

$$\sqrt[3]{2683296}$$

$$= \sqrt[3]{2^5 \cdot 3^2 \cdot 7 \cdot 11^3}$$

$$= \sqrt[3]{2^3\, 2^2 \cdot 7 \cdot 11^3}$$

$$= 2^{\frac{3}{3}} \cdot 11^{\frac{3}{3}} \sqrt[3]{2^2 \cdot 7 \cdot 3^2}$$

$$= 2 \cdot 11 \sqrt[3]{28 \cdot 3^2} = 22\sqrt[3]{252}$$

$$\sqrt{x^{11}} = \sqrt{x^{10+1}}$$

$$= \sqrt{x^{10} x^1} = x^{\frac{10}{2}}\sqrt{x^1}$$

$$= x^5\sqrt{x}$$

$$\begin{array}{r} 28 \\ \times\ 9 \\ \hline 252 \end{array}$$

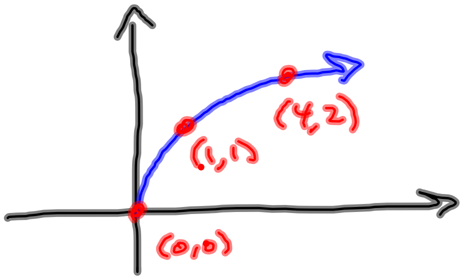
$$\sqrt{x^4} = x^2$$

$$\sqrt{x^6} = |x^3|$$ if x is real.

If x is positive, then

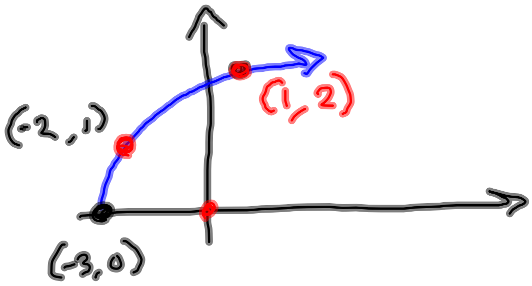
$$\sqrt{x^6} = x^3$$

$f(x) = \sqrt{x}$



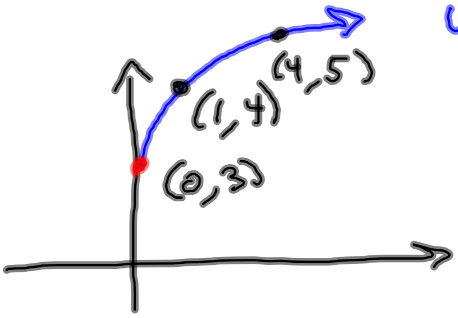
$f(x+3) = \sqrt{x+3}$

Left 3



$f(x) + 3 = \sqrt{x} + 3$

Up 3



All working off the basic graph of $f(x)$.

$\sqrt{x-3}$

RIGHT 3

$\sqrt{x} - 3$

Down 3

Rationalize the Denominator

$$\left(\frac{2+3\sqrt{2}}{5-2\sqrt{2}}\right)\left(\frac{5+2\sqrt{2}}{5+2\sqrt{2}}\right)$$

$$= \frac{10+4\sqrt{2}+15\sqrt{2}+6\cdot 2}{25-8}$$

$$= \frac{22+19\sqrt{2}}{17}$$

Divide

$$\left(\frac{2+3i}{5-2i}\right)\left(\frac{5+2i}{5+2i}\right)$$

$$= \frac{10+4i+15i+6i^2}{5^2+2^2}$$

$$= \frac{4+19i}{29} = \frac{4}{29}+\frac{19}{29}i$$