

Powers that I need to know:

(No calculator!)

$$\begin{aligned}2^2 &= \\2^3 &= \\2^4 &= \\2^5 &= \\2^6 &= \\2^7 &= \\2^8 &= \\3^2 &= \\3^3 &= \\3^4 &= \\4^2 &= \\4^3 &= \\4^4 &= \\4^5 &= \\5^2 &= \\5^3 &= \\5^4 &= \\5^5 &= \\6^2 &= \\6^3 &= \\6^4 &= \\7^2 &= \\7^3 &= \\8^2 &= \\8^3 &= \\9^2 &= \\9^3 &= \\10^2 &= \\10^3 &= \\10^4 &= \\11^2 &= \\12^2 &= \\13^2 &= \\14^2 &= \\15^2 &= \\16^2 &= \\17^2 &= \\18^2 &= \\19^2 &= \\20^2 &= \end{aligned}$$

Roots that I need to know

(no calculator!)

$$\begin{aligned}\sqrt{4} &= \\\sqrt{9} &= \\\sqrt{16} &= \\\sqrt{25} &= \\\sqrt{36} &= \\\sqrt{49} &= \\\sqrt{64} &= \\\sqrt{81} &= \\\sqrt{100} &= \\\sqrt{121} &= \\\sqrt{144} &= \\\sqrt{169} &= \\\sqrt{196} &= \\\sqrt{225} &= \\\sqrt{256} &= \\\sqrt{289} &= \\\sqrt{324} &= \\\sqrt{361} &= \\\sqrt{400} &= \\\sqrt[3]{8} &= \\\sqrt[3]{64} &= \\\sqrt[3]{125} &= \\\sqrt[3]{216} &= \\\sqrt[3]{343} &= \\\sqrt[3]{512} &= \\\sqrt[3]{729} &= \\\sqrt[3]{1000} &= \\\sqrt[4]{16} &= \\\sqrt[4]{81} &= \\\sqrt[4]{256} &= \\\sqrt[4]{625} &= \\\sqrt[4]{1296} &= \\\sqrt[5]{32} &= \\\sqrt[5]{243} &= \\\sqrt[5]{1024} &= \\\sqrt[6]{64} &= \\\sqrt[7]{128} &= \\\sqrt[8]{256} &= \end{aligned}$$