1. A. $3^5 + 5^5 = 243 + 125 = 368$
   B. $(3+5)^3 = 3^3 + 5^3 = 27 + 125 = 152$
   C. $(3 \times 5)^3 = 3^3 \times 5^5 = 27 \times 125 = 3375$
   D. $\frac{5^4}{5^2} = 5^2 = 25$
   E. $\left(\frac{4^3}{2^4}\right)\left(\frac{2^3}{4^4}\right) = \frac{64}{16} \times \frac{8}{256} = 4 \times \frac{8}{256} = \frac{1}{8}$

2. A. $a^c . b^a = 4^{-2} \times 3^4 = \frac{1}{4^2} \times 81 = \frac{81}{16} = 5{,}0625$
   B. $\frac{a^b}{b^c} = \frac{4^3}{3^{-2}} = 4^3 \times 3^2 = 576$
   C. $(a+b)^c(a-c)^b = (4+3)^{-2}\big(4-(-2)\big)^3 = (7)^{-2}(6)^3 = 42$
   D. $\frac{(a+b)^c}{(a-b)^c} = \frac{(4+3)^{-2}}{(4-3)^{-2}} = \frac{7^{-2}}{1^{-2}} = \frac{1}{49}$

3. A. $\sqrt[3]{\frac{24}{250}} = \sqrt[3]{\frac{12}{125}} = \frac{\sqrt[3]{12}}{\sqrt[3]{125}} = \frac{\sqrt[3]{12}}{5}$
   B. $\sqrt{\frac{48}{45}} = \sqrt{\frac{48 \div 3}{45 \div 3}} = \sqrt{\frac{16}{15}} = \frac{4}{\sqrt{15}} = \frac{4}{\sqrt{15}} \times \frac{\sqrt{15}}{\sqrt{15}} = \frac{4\sqrt{15}}{15}$
   C. $\sqrt[5]{2000} \approx 4{,}57305$

4. A. $(2x-1)(x^2+2x) = 2x^3 + 4x^2 - x^2 - 2x = 2x^3 + 3x^2 - 2x$
   B. $(x^2-3)(x+1) = x^3 \times x + x^3 - 3x - 3 = x^4 + x^3 - 3x - 3$

5.