

• **Conclusions:**

$$\frac{3^5 2^3}{3^2 2^5} = \frac{3^3}{2^2} \quad \text{or} \quad \frac{3^5 2^3}{3^2 2^5} = \frac{27}{4} = 6 \frac{3}{4}$$

2.3 Problems (6 pt Problems)

1. Write the following compactly using positive exponents: $5^{-2} 5^2$.
2. Write the following compactly using positive exponents: $\left(\frac{5^{-2} 3^2}{5^{-4} 3^{-4} 2^3}\right)^{-3}$.
3. If the sun is roughly 9.14×10^7 miles from the earth and light travels through space at roughly 6.71×10^8 miles per hour, roughly how many light years is the sun away from the earth? How many light minutes is this?

2.4 Exercises

1. Evaluate $(-2)^3$.
2. Evaluate $4^{-1} - 2^0 + 1$.
3. Evaluate $\left(\frac{2}{3}\right)^{-2} - 4^{-1}$.
4. Evaluate $\left(\frac{2^3 3^{-5} 5^{-17}}{2^{-2} 3^2 5^{-11}}\right)^{-3}$.
5. Estimate $(2.112 \times 10^3)(3.23 \times 10^{-7})$.
6. Which quantity is bigger and why? 5^{10} or 5^5 .
7. Which quantity is bigger and why? 5^{-10} or 5^{-5} .