Lesson 1.3

Extra Practice

Simplify the expression. Write your answer as a power.

1.
$$\frac{37}{35}$$
 3²

5.
$$\frac{76}{7^2}$$
 74

7.
$$\frac{9^{12}}{9^7}$$
 Q⁵

2.
$$\frac{6^8}{6^5}$$
 6

4.
$$\frac{95}{93}$$
 6^2

6.
$$\frac{15^{14}}{15^{10}}$$
 15 4

9. Your friend simplifies the quotient. Is your friend correct? Explain your reasoning.

$$\frac{8^{18}}{8^6} = 8^{\frac{18}{6}}$$
$$= 8^3$$

NO needs to subtract

Simplify the expression. Write your answer as a power.

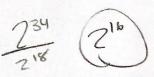
10.
$$\frac{48.4^4}{4^2}$$
 $\frac{412}{4^2}$ = 410

11.
$$\frac{3^3 \cdot 3^6}{3^4}$$
 $\frac{3^9}{3^4}$ = 35

12.
$$\frac{2^{14}}{2^7 \cdot 2^4}$$
 $\frac{2^{14}}{2^{11}} = 2^3$

13.
$$\frac{7^9}{7^2 \cdot 7^5}$$
 $\frac{39}{77} = 7^2$

14. A personal computer developed in the 1980s had approximately 2¹⁸ bytes of memory. Your teacher's laptop has 16 gigabytes = 2³⁴ bytes of memory. How many times more memory does your teacher's laptop have than the personal computer from the 1980s?



Simplify the expression. Write your answer as a power.

15.
$$\frac{3^6}{3^4} \cdot \frac{3^7}{3^5}$$
 $3^2 \cdot 3^2 \cdot 3^4$

16.
$$\frac{9^9}{9^3} \cdot \frac{9^6}{9^2}$$
 96. 94 = 96
18. $\frac{8^5}{8^2} \cdot \frac{8^4}{8^2}$ 83. 82 \in 85

17.
$$\frac{5^{10}}{5^4} \cdot \frac{5^8}{5^3} \cdot 5^6 \cdot 5^7 \cdot 5^8$$
19. $\frac{6^5}{6^4} \cdot \frac{6^9}{6^2}$

20.
$$\frac{4^3 \cdot 4^5}{4^4} \cdot \frac{4^7}{4^2}$$
 $\frac{4^8}{4^4} \cdot \frac{4^7}{4^2}$

