

Name _____

8-3B

Lesson Master

Questions on SPUR Objectives
See pages 521–523 for objectives.

SKILLS

Objective A

In 1 and 2, a fraction is given.

- a. Write the numerator and denominator in expanded form.
- b. Simplify the fraction.

1. $\frac{a^5}{a^2}$

2. $\frac{10j^5k^3}{12j^2k}$

a. _____

a. _____

b. _____

b. _____

In 3–13, simplify.

3. $\frac{-c^{10}}{c^7}$

4. $\frac{3.10 \times 10^8}{2 \times 10^3}$

5. $\frac{3.9 \times 10^6}{3 \times 10^4}$

6. $\frac{3d^3}{6d}$

7. $\frac{22e^5}{11e^3}$

8. $\frac{16f^6}{-4f^6}$

9. $\frac{27g^{10}}{18g^4}$

10. $\frac{-24h^{11}}{9h^7}$

11. $\frac{(-2)^x}{(-2)^y}$

12. $\frac{30m^8n^4}{42m^5n^2}$

13. $\frac{81p^4r}{-36pr^4}$

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PROPERTIES Objective G

14. Write an algebraic fraction for which you can use the Quotient of Powers Property to simplify to $3x^5$. _____

In 15–19, use the Quotient of Powers Property to find the value of x .

15. $\frac{y^x}{y^3} = y^{11}$ _____

16. $\frac{5^{13}}{5^x} = 5^4$ _____

17. $\frac{18m^x}{21m^3} = \frac{6m^4}{7}$ _____

18. $\frac{(-4)^7}{(-4)^x} = (-4)^5$ _____

19. $\frac{(2y)^x}{(2y)^8} = (2y)^{12}$ _____

20. Amber tried to simplify $\frac{m^9}{m^3}$, and she got m^3 . Explain the error she made in simplifying the fraction.
- _____
- _____

21. *Multiple Choice.* Which expression can be simplified to $5m^{2x}$? _____

A $\frac{10m^x}{2m^x}$

B $\frac{10m^{3x}}{2m^x}$

C $\frac{10m^{6x}}{2m^{3x}}$

D $\frac{10m^{8x}}{2m^{4x}}$

22. *Multiple Choice.* Consider the equation $\frac{5^m}{5^n} = 5^6$. Which statement accurately describes the values of m and n ? _____

A $m = n$

B $m = 4$ and $n = 2$

C $m + n = 6$

D $m - n = 6$