

DIVIDING MONOMIALS

<ul style="list-style-type: none"> Step 1: Divide the <u>coefficients</u>. Step 2: Use the QUOTIENT RULE to simplify the <u>exponents</u>. 	<p>QUOTIENT RULE:</p> $\frac{x^a}{x^b} = x^{a-b}$
---	--

<p>Directions: Use the quotient rule to simplify the following monomials.</p>	
<p>1. $\frac{x^5}{x^3} = x^{5-3} = x^2$</p>	<p>2. $\frac{k^8}{k^3} = k^{8-3} = k^5$</p>
<p>3. $\frac{m^3}{m^3} = m^{3-3} = m^0 = 1$</p>	<p>4. $\frac{a^6b^4}{a^2b^3} = a^4b$</p>
<p>5. $\frac{6x^4}{2x^3} = 3x$</p>	<p>6. $\frac{14x^2y^2}{7xy} = 2xy$</p>
<p>7. $\frac{-36a^2b^5}{4a^2b^3} = -9b^2$</p>	<p>8. $\frac{-15x^6y^5z}{-3x^5y^3} = 5xy^2z$</p>
<p>9. $\frac{4n^5}{8n} = \frac{n^4}{2}$</p>	<p>10. $\frac{36x^9y^5}{54x^3y^2} = \frac{4x^6y^3}{9}$</p>

PUTTING IT ALL TOGETHER

SIMPLIFY THE MONOMIALS COMPLETELY. (Make sure to only do one step at a time!)

<p>11. $\frac{(3x^5)^2}{27x^3} = \frac{8x^{10}}{27x^3} = \frac{8x^7}{27}$</p>	<p>12. $\frac{(2a^2b^4)^3}{4a^3b^7} = \frac{8a^6b^{12}}{4a^3b^7} = 2a^3b^5$</p>
--	--

$$13. \frac{12x^9y^4}{(4xy)^2} = \frac{12x^9y^4}{16x^2y^2} = \frac{3x^7y^2}{4}$$

$$14. \frac{(2xy^4)^4}{(2x^2y^3)^2} = \frac{16x^4y^{16}}{4x^4y^6} = 4y^{10}$$

$$15. \left(\frac{12x^5}{15x}\right)^2 = \frac{144x^{10}}{225x^2} = \frac{16x^8}{25}$$

$$16. \left(\frac{4ab^2}{5ab}\right)^2 = \frac{16a^2b^4}{25a^2b^2} = \frac{16b^2}{25}$$

$$17. \frac{(9x^5y^6)(4xy)}{6x^2y^4}$$

$$\frac{36x^6y^7}{6x^2y^4} = 6x^4y^3$$

$$18. \frac{(10ab)^2(2a^4b^3)}{4a^5b}$$

$$\frac{100a^2b^2 \cdot 2a^4b^3}{4a^5b} = \frac{200a^6b^5}{4a^5b}$$

$$50ab^4$$

$$19. \frac{(8cd^3)(-3c^4)}{6c^2d} - 9c^3d^2$$

$$\frac{-24c^5d^3}{6c^2d} - 9c^3d^2$$

$$-4c^3d^2 - 9c^3d^2$$

$$-13c^3d^2$$

$$20. \frac{(-6x^4y^6)^2}{(-3x^3y^5)^2} - 7x^2y^2$$

$$\frac{36x^8y^{12}}{9x^6y^{10}} - 7x^2y^2$$

$$4x^2y^2 - 7x^2y^2$$

$$-3x^2y^2$$