

2.6 Negative Exponents

Class Notes – Expand the expression, then condense it. Express your answer using powers.

LP#1 $\frac{2^3}{2^7}$	$\frac{6^3}{6^5}$
LP#2 $\frac{x^2}{x^7}$	$\frac{y^4}{y^{10}}$
LP#3 $\frac{14}{14^4}$	$\frac{w}{w^6}$

Class Notes – Use the division rule and express your answers as a power.

LP#4 $\frac{2^3}{2^7}$	$\frac{6^3}{6^5}$
LP#5 $\frac{x^2}{x^7}$	$\frac{y^4}{y^{10}}$
LP#6 $\frac{14}{14^4}$	$\frac{w}{w^6}$

Complete the rule for negative exponents below by comparing the two sets of class notes above.

$x^{-a} =$

Class Notes – Express the following expressions using positive exponents.

LP#7 5^{-3}	13^{-2}	2^{-4}	3^{-3}
LP#8 y^{-5}	m^{-8}	15^{-1}	7^{-2}
LP#9 x^{-10}	m^{-1}	9^{-2}	4^{-3}
LP#10 $(3m)^{-4}$	$3m^{-4}$	$(4ab)^{-2}$	$4ab^{-2}$

Review – Express the following expressions using positive exponents.

R#1 3^{-2}	5^{-4}	x^{-2}	y^{-5}
R#2 10^{-2}	6^{-3}	p^{-3}	d^{-6}
R#3 9^{-1}	2^{-3}	k^{-10}	h^{-7}

Homework – Express the following expressions using positive exponents.

- 1) 4^{-2} 2) 8^{-2} 3) 5^{-2} 4) 12^{-2} 5) 11^{-2}
6) 13^{-2} 7) 4^{-4} 8) 8^{-3} 9) 14^{-2} 10) 2^{-5}
11) a^{-3} 12) w^{-7} 13) b^{-5} 14) t^{-2} 15) c^{-1}
16) q^{-4} 17) n^{-8} 18) k^{-2} 19) j^{-6} 20) v^{-11}

Synthesis – Simplify and express the following expressions using positive exponents.

- 21) $3^{-4} \cdot 3^2$ 22) $6^5 \cdot 6^{-8}$ 23) $m^{-1} \cdot m^5$ 24) $k^{-3} \cdot k^{-5}$ 25) $10^{-1} \cdot 10^3$
26) $\frac{5^2}{5^{-1}}$ 27) $\frac{d^{-5}}{d^3}$ 28) $\frac{4^0}{4^{-3}}$ 29) $h^6 \div h^{-4}$ 30) $8^{-3} \div 8^{-5}$