

Worksheet #5—Integer Exponent Problems.tex

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Fall 2004

Simplify each of the following.

(1) 5^2

(2) 3^3

(3) $x^2 x^3$

(4) x^{-2}

(5) 2^{-3}

(6) $(x^2)^3$

(7) $3^2 2^3$

(8) $\frac{1}{x^{-3}}$

(9) 6^{-1}

(10) $2x^3 (x^4)$

(11) $(2y^3)^2$

(12) $\frac{x^5}{x^3}$

(13) $\frac{x^2}{x^3}$

(14) $(x^2 y^3)^3$

(15) -3^2

(16) $\frac{4}{x^{-2}}$

(17) 3^{-2}

(18) $(-3)^2$

(19) $(-2)^3$

(20) 5^0

(21) $\frac{t^{-3}}{-2}$

(22) 8^{-1}

(23) 5^{-2}

(24) $\frac{1}{3^{-1}}$

(25) 8^{-2}

(26) $x^5 x^{-2}$

(27) $(x^{-2})^{-2}$

(28) $(x^3)^{-2}$

(29) $\frac{x^2 x^4}{x^5}$

(30) $(2x^{-2})^3$

(31) $(2x^{-2})^{-3}$

(32) $(3^2)(2^3)$

(33) $5^7 5^{-5}$

(34) $(2x^3)(3xy^2)$

(35) $\frac{x^{-4}}{x^{-2}}$

(36) $\frac{z^4}{2z^{-3}}$

(37) $\frac{2y^{-3}}{y^{-7}}$

(38) $3x^{-3}$

(39) $\left(\frac{2}{3}\right)^{-1}$

(40) $\left(\frac{3}{2}\right)^3$

(41) $\left(\frac{4}{9}\right)^{-2}$

(42) $(2x^{-3}y^2)^{-2}$

(43) 7^{-2}

(44) -5^{-2}

(45) $(-3)^{-2}$

(46) $(2z^{-1})^{-1}$

(47) $(s^{-3})^{-1}$

(48) $\frac{x^{-3}}{x^4}$

(49) $(x^2 y^{-1})^{-3}$

(50) $\frac{y^{-3} x^2}{y^4 x^{-3}}$

(51) $5^{-1} 3^2$

(52) $\frac{2^{-3}}{3^{-2}}$

(53) $(x^2 y^{-2})^{-4}$

(54) $2^{-1} + 3^2$

$$(55) -3(x^{-1})^2$$

$$(58) \frac{-3}{x^4}$$

$$(56) \frac{1}{x^2 y^{-3}}$$

$$(59) \left(\frac{-4}{x^2}\right)^{-3}$$

$$(57) \left(\frac{x^{-3}}{x^{-5}}\right)^{-2}$$

$$(60) \frac{3^{-2}}{5^2}$$

- Answers: (1) 25 (2) 27 (3) x^5 (4) x^{-2} (5) $\frac{1}{8}$ (6) x^6 (7) 72 (8) x^3
- (9) $\frac{1}{6}$ (10) $2x^7$ (11) $4y^6$ (12) x^2 (13) $\frac{1}{x}$ (14) x^6y^9 (15) -9 (16) $4x^2$
- (17) $\frac{1}{9}$ (18) 9 (19) -8 (20) 1 (21) $\frac{-1}{2t^3}$ (22) $\frac{1}{8}$ (23) $\frac{1}{25}$ (24) 3
- (25) $\frac{1}{64}$ (26) x^3 (27) x^4 (28) x^{-6} (29) x (30) $\frac{8}{x^6}$ (31) $\frac{x^6}{8}$ (32) 72
- (33) 25 (34) $6x^4y^2$ (35) x^{-2} (36) $\frac{z^7}{2}$ (37) $2y^4$ (38) $\frac{3}{x^3}$ (39) $\frac{3}{2}$
- (40) $\frac{27}{8}$ (41) $\frac{81}{16}$ (42) $\frac{x^6}{4y^4}$ (43) $\frac{1}{49}$ (44) $-\frac{1}{25}$ (45) $\frac{1}{9}$ (46) $\frac{z}{2}$ (47) s^3
- (48) x^{-7} (49) $\frac{y^3}{x^6}$ (50) $\frac{x^5}{y^7}$ (51) $\frac{9}{5}$ (52) $\frac{9}{8}$ (53) $\frac{y^8}{x^8}$ (54) $\frac{19}{2}$ (55) $\frac{-3}{x^2}$
- (56) $\frac{y^3}{x^2}$ (57) x^{-4} (58) $\frac{-3}{x^4}$ (59) $\frac{-x^6}{64}$ (60) $\frac{1}{225}$