

HW: Worksheet/8-27

Warm up:

Simplify.

$$1) 3^5 \cdot 3^9$$

3^{14}

$$2) \frac{x^{12}}{x^2} = x^{10}$$

$$3) \frac{6^6}{6^6} = 1$$

$$4) x^{5a+2} \cdot x^{3a-8}$$

x^{8a-6}

Write using one exponent.

$$(3^2)^3 = 3^2 \cdot 3^2 \cdot 3^2 = 3^6$$

$$(5^4)^5 = 5^4 \cdot 5^4 \cdot 5^4 \cdot 5^4 \cdot 5^4 = 5^{20}$$

$$(x^9)^2 = x^9 \cdot x^9 = x^{18}$$

Try to write a rule for $(x^a)^b$

$$(x^a)^b = x^{ab}$$

2.4

2.4

Simplify.

$$(3x^5)^2 = 3x^5 \cdot 3x^5 = 9x^{10}$$

$$(2x^4)^3 = 2x^4 \cdot 2x^4 \cdot 2x^4 = 8x^{12}$$

$$(x^2y^6)^4 = x^2y^6 \cdot x^2y^6 \cdot x^2y^6 \cdot x^2y^6 = x^8y^{24}$$

Try to write a rule for $(x^a y^b)^c$

$$(x^a y^b)^c = x^{ac} y^{bc}$$

$$(x^3)^5 = x^{15}$$

$$(7a^3b^8)^2 = 49a^6b^{16}$$

HW Solutions

$$\textcircled{5} \quad -5a^3b^7 \cdot 4a^2b^2$$
$$\textcircled{-20a^5b^9}$$

$$\textcircled{8} \frac{a^4}{a^{10}} = a^{-6}$$

$$\textcircled{9} \frac{16x^8}{2x^5} = 8x^3$$

$$\textcircled{10} \quad \frac{18a^{10}b^7c^4}{6a^2bc^9} = \textcircled{3a^8b^6c^{-5}}$$

$$1) (x^7)^8 \quad 2) (b^3)^{-5} \quad 3) (w^{-2})^{-8}$$

$$4) (4x^2)^4 \quad 5) (6c^{17})^2 \quad 6) \cancel{(5g^{18})^{-3}}$$

$$7) (x^6 y^{10})^{12} \quad 8) (a^2 b^5 c^7)^9$$

$$9) (x^a y^h z^k)^7 \quad 10) (u^6 v^t w^{2r})^x$$

1) $(x^7)^8$

x^{56}

2) $(b^3)^{-5}$

b^{-15}

3) $(w^{-2})^{-8}$

w^{16}

$$4)(4x^2)^4$$

$$4 \cdot 4 \cdot 4 \cdot 4 \\ 16 \cdot 4 \cdot 4 \\ 64 \cdot 4$$

$$256x^8$$

$$5)(6c^{17})^2$$

$$36c^{34}$$

$$6)(\cancel{5g^{18}})^{-3}$$

$$7) (x^6 y^{10})^{12}$$

$$x^{72} y^{120}$$

$$8) (a^2 b^5 c^7)^9$$

$$a^{18} b^{45} c^{63}$$

$$9) (x^a y^h z^k)^7$$

$$x^{7a} y^{7h} z^{7k}$$

$$10) (u^6 v^t w^{2r})^x$$

$$u^{6x} v^{tx} w^{2rx}$$

