Chapter 3 BLM Answers

BLM 3–1 Chapter 3 Problems of the Week
1. a) 5776 **b)** Answers will vary. Example: $25^2 =$ 625
2. a) 52 cm^2 **b)** 4.48 cm, 5.66 cm, 7.21 cm
3. Answers will vary. Example: 12

BLM 3–2 Section 3.1 Extra Practice
1. a) 6^2, 36 **b)** 4^3, 64
c) 9^5, 59 049 **d)** 2^6, 64
2. a) 5^3, 5, 3, 125 **b)** 1^7, 1, 7, 1
c) 7^6, 7, 6, 117 649
d) 305^1, 305, 1, 305
3. a) 6 × 6 × 6, 216
b) 2 × 2 × 2 × 2 × 2, 32
c) 3 × 3 × 3 × 3, 81
d) 10 × 10 × 10 × 10 × 10 × 10, 1 000 000
4. a) (−2) × (−2) × (−2) × (−2), 16
b) −(2 × 2 × 2 × 2), −16
c) (−4) × (−4) × (−4), −64
d) −(4 × 4 × 4), −64
e) −[(−6) × (−6) × (−6)], 216
f) −[(−6) × (−6) × (−6) × (−6)], −1296
5. Example:

Repeated Multiplication	Exponential Form	Value
a) (−3) ✕ (−3) ✕ (−3) ✕ (−3)	$(−3)^4$	81
b) (−2) ✕ (−2) ✕(−2) ✕(−2) ✕(−2)	$(−2)^5$	−32
c) (−6) ✕ (−6) ✕ (−6) ✕ (−6) ✕ (−6)	$(−6)^5$	−7776
d) (−5) ✕(−5) ✕(−5)	$(−5)^3$	−125

6. 12^0, 5^2, 3^3, 2^5, 4^3

BLM 3–4 Section 3.2 Extra Practice
1. a) 2^8, 256 **b)** $(−4)^4$, 256 **c)** 6^3, 216
d) 9^6, 531 441
2. a) $3^4 × 3^2$, 3^6 **b)** $5^4 × 5^6$, 5^{10}
c) $8^6 × 8^4$, 8^{10} **d)** $11^3 × 11^2$, 11^5
3. a) 3^2, 9 **b)** $(−5)^5$, −3125
c) $(−2)^6$, 64 **d)** 8^0, 1
4. a) $5^4 ÷ 5^2$, 5^2 **b)** $7^3 ÷ 7^3$, 7^0
c) $\dfrac{8^7}{8^4}$, 8^3 **d)** $\dfrac{2^6}{2^5}$, 2^1

5.

Repeated Multiplication	Two Powers
a) 3 × 3 × (−4) × (−4)	$3^2 × (−4)^2$
b) 4 × 4 × 6 × 6	$4^2 × 6^2$
c) $\dfrac{2}{3} × \dfrac{2}{3} × \dfrac{2}{3} × \dfrac{2}{3} × \dfrac{2}{3}$	$\dfrac{2^5}{3^5}$

6. NO. $−8^2 = −(8 × 8) = −64$;
$(−8)^2 = (−8) × (−8) = 64$

BLM 3–5 Section 3.3 Extra Practice
1. a) 135 **b)** 150 **c)** −64 **d)** −448
2. a) $4(3)^3 = 108$ **b)** $5(−2)^5 = −160$
c) $−1(10)^8 = −100\ 000\ 000$
d) $6(−10)^5 = −600\ 000$
3. a) −24 576 **b)** 3584 **c)** 2916 **d)** −2401

4. a) 60 **b)** 11 **c)** 55 **d)** 157
5. a) 94 **b)** −36 **c)** 64 **d)** 90
6. a) $3(2^4)$ **b)** $(10 + 10)^3$ **c)** They are equal.
d) $4 × 3^2$

BLM 3–7 Section 3.4 Extra Practice
1. Volume $= 4^3 = 64$ cm^3
2. a) $30 × 3 = 90$ **b)** $30 × 3^3 = 810$ **c)** $30 × 3^5 = 7290$ **d)** $30 × 3^n$
3. 216 cm^2
4. 15 cm
5. 55.04 cm^2
6. a) $d = 4.9(2)^2 = 19.6$ m
b) $d = 4.9(4)^2 = 78.4$ m
7. 835.24 cm^2

BLM 3–10 Chapter 3 Test
1. D **2.** C **3.** D **4.** A **5.** A
6. 28
7. $-\dfrac{1}{4}$
8. $−(4)^3$, $(−1)^5$, 2^3, $(−4)^2$
9. a) 3 × 3 × 3 × 3 × 3 × 3 × 3
b) (−1) × (−6) × (−6) × (−6) × (−6) × (−6)
c) 4 × 4 × 4 × 5 × 5 × 5
10. a) 6^3 **b)** 2^{12}
11. a) 100 **b)** 800