

Chapter 3 Practice Test

Section 1: Multiple Choice

For each question, select the best answer.

1. 3^{-2} simplified is:

A. $\frac{1}{6}$

B. $\frac{1}{9}$

C. -6

D. -9

2. Which fraction is equal to $\left(\frac{1}{4}\right)^2$?

A $\frac{1}{16}$

B $\frac{1}{8}$

C $\frac{1}{4}$

D $\frac{1}{2}$

3. Which is the result when $m^5 \times m \div m^4$ is simplified?

A m^9

B m

C m^2

D m^{10}

4. What is the value of $2^3 \times 2^4$?

A 48

B 128

C 4096

D 16 384

5. What is the value of $7^7 \div 7^5$?
- A 14
 - B 7
 - C 1
 - D 49
6. Which pair of terms are *not* like terms?
- A $4a$ and $7a$
 - B $2mn$ and mn^2
 - C $3p^2q$ and $-p^2q$
 - D $-x$ and $3x$
7. The expression $5a^2b^2 - ab^3$ is a
- A monomial
 - B binomial
 - C trinomial
 - D term
8. The degree of $-b^4d + bd^3 + b^6$ is
- A 3
 - B 4
 - C 5
 - D 6
9. The result of expanding $-4x(3 - x)$ is
- A $-12x - 4x^2$
 - B $12x + 4x^2$
 - C $-12x + 4x^2$
 - D $12x - 4x^2$

Section 2: Short Response

10. Write as a single power, then evaluate.

a) $[(-3)^2]^{4} \div (-3)^3$

b) $\frac{(7^2)^3 \times 7^3}{7^8}$

11. Simplify.

a) $p^5 \times p^4 \div p^3$

b) $(k^4)^2 \times k^5$

c) $-15x^3y^2 \div 3y$

d) $(-2m^3n^5)^2$

e) $\frac{5x^3y^2 \cdot 2x^4y}{20x^5y^5}$

f) $\frac{(3x^3y)^2}{9x^6y^2}$

12. Simplify.

a) $(4k - 1) + (2k + 3)$

b) $(2v + 3) - (5v + 4)$

13. Expand and simplify.

a) $-3(g + 2) + 4(g - 7)$

b) $5(a - 3) - (a + 1)$

c) $2[m + 4(m - 1)]$

d) $2x(3x + 2) - 4(x^2 + 2x)$

e) $\frac{1}{3}(3a + 2) + \frac{1}{4}(4a - 2)$

Section 3: Application

14. Four actors in a movie opted to be paid different ways.

Actor	Fixed Rate (\$)	Portion of Box Office Sales (\$)
Brad	500 000	–
Gwyneth	300 000	$0.02x$
Joaquim	150 000	$0.03x$
Julia	80 000	$0.08x$

- a) Write a simplified expression for the total amount to be paid to the four actors.
b) In the first week, box office sales were \$1 285 000. What was the total amount paid to the actors for that week?

Answers

1. B
2. A
3. C
4. B
5. D
6. B
7. B
8. D
9. C
10. a) $(-3)^5; -243$ b) $7^1; 7$
11. a) p^6 b) k^{13} c) $-5x^3y$ d) $4m^6n^{10}$ e) $\frac{x^2}{2y^2}$ f) 1
12. a) $6k + 2$ b) $-3v - 1$
13. a) $g - 34$ b) $4a - 16$ c) $10m - 8$ d) $2x^2 - 4x$ e) $2a + \frac{1}{6}$
14. a) $A = 1\,030\,000 + 0.13x$ b) \$1 197 050