

## Chapter 9 Test (Part B)

### Short Answer

Simplify the rational expression. State any restrictions on the variable.

1.  $\frac{p^2 - 4p - 32}{p + 4}$

2.  $\frac{q^2 + 11q + 24}{q^2 - 5q - 24}$

3.  $\frac{n^4 - 11n^2 + 30}{n^4 - 7n^2 + 10}$

Multiply or divide. State any restrictions on the variables.

4.  $\frac{4a^5}{7b^4} \cdot \frac{2b^2}{2a^4}$

5.  $\frac{z^2}{z + 1} \cdot \frac{z^2 + 3z + 2}{z^2 + 3z}$

6.  $\frac{c + 1}{c - 5} \div \frac{c - 2}{c^2 - 7c + 10}$

7.  $\frac{x^2 - 16}{x^2 + 5x + 6} \div \frac{x^2 + 5x + 4}{x^2 - 2x - 8}$

Add or subtract. Simplify if possible.

8.  $\frac{3}{m + 5} + \frac{8}{m^2 - 25}$

9.  $\frac{3}{t - 6} + \frac{3}{t^2 - 36}$

10.  $\frac{d^2 - 9d + 20}{d^2 - 3d - 10} + \frac{d^2 - 2d - 8}{d^2 + 4d - 32}$

11.  $\frac{a^2 - 2a - 3}{a^2 - 9a + 18} - \frac{a^2 - 5a - 6}{a^2 + 9a + 8}$

Simplify the complex fraction.

12.  $\frac{\frac{n - 6}{n^2 + 11n + 24}}{\frac{n + 1}{n + 3}}$

Solve the equation. Check the solution.

13.  $\frac{-2}{x + 4} = \frac{4}{x + 3}$

14.  $\frac{-5}{x + 2} = \frac{2}{x + 4}$

15.  $\frac{5}{x - 2} = \frac{2}{x - 4}$

16.  $\frac{g + 4}{g - 2} = \frac{g - 5}{g - 8}$

17.  $\frac{a}{a^2 - 36} + \frac{2}{a - 6} = \frac{1}{a + 6}$

18.  $\frac{6}{x^2 - 9} - \frac{1}{x - 3} = 1$

19.  $\frac{5}{6w} + \frac{1}{w} = -4$

20.  $\frac{1}{4b} + \frac{5}{3b} = -2$

**Chapter 9 Test (Part B)**  
**Answer Section**

**SHORT ANSWER**

1. ANS:

$$p - 8; p \neq -4$$

DIF: L1

2. ANS:

$$\frac{q + 8}{q - 8}; q \neq -3, q \neq 8$$

DIF: L1

3. ANS:

$$\frac{n^2 - 6}{n^2 - 2}; n \neq \pm\sqrt{5}, n \neq \pm\sqrt{2}$$

DIF: L2

4. ANS:

$$\frac{4a}{7b^2}, a \neq 0, b \neq 0$$

DIF: L1

5. ANS:

$$\frac{z^2 + 2z}{z + 3}, z \neq -1, 0, -3$$

DIF: L1

6. ANS:

$$\frac{(c + 1)(c - 2)}{c - 2}, c \neq 5, 2$$

DIF: L1

7. ANS:

$$\frac{(x - 4)^2}{(x + 3)(x + 1)}; x \neq -4, -3, -2, -1, 4$$

DIF: L2

8. ANS:

$$\frac{3m - 7}{(m - 5)(m + 5)}$$

DIF: L1

9. ANS:

$$\frac{3t + 21}{(t - 6)(t + 6)}$$

DIF: L1

10. ANS:

$$\frac{2d^2 + 8d - 28}{(d + 2)(d + 8)}$$

DIF: L2

11. ANS:

$$\frac{21a - 28}{(a - 6)(a + 8)}$$

DIF: L2

12. ANS:

$$\frac{r - 6}{(r + 1)(r + 8)}$$

DIF: L1

13. ANS:

$$-\frac{11}{3}$$

DIF: L1

14. ANS:

$$-\frac{24}{7}$$

DIF: L1

15. ANS:

$$\frac{16}{3}$$

DIF: L1

16. ANS:

$$14$$

DIF: L1

17. ANS:

$$9$$

DIF: L1

18. ANS:

$$-4$$

DIF: L1

19. ANS:  
$$\frac{11}{-24}$$

DIF: L1

20. ANS:  
$$\frac{23}{-24}$$

DIF: L1