

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Perform the indicated operations.

1) $(9x^2 - 5x - 5) + (-2x^2 - 4x + 10)$

Multiply.

2) $(x + 1)(5x - 11)$

3) $(9a + 5c)(9a - 5c)$

4) $(n + 7)^2$

Factor the trinomial.

5) $u^2 - 10u + 24$

6) $9y^2 + 18y + 8$

7) $5y^3 - 10y^2 - 75y$

Factor by grouping.

8) $x^3 - 7x^2 - 8x + 56$

Factor the difference of squares.

9) $x^2 - 121$

10) $49x^2 - 9$

Factor.

11) $z^2 - 8z + 16$

12) $a^3 - 12a^2 + 36a$

Perform the indicated operation and simplify.

13) $\frac{k^2 + 9k + 14}{k^2 + 11k + 18} \cdot \frac{k^2 + 9k}{k^2 - 2k - 63}$

14) $\frac{z^2 - 18z + 81}{z^2 - 9} \cdot \frac{z^2 - 3z}{z - 9}$

Divide and simplify.

15) $\frac{z^2 - 100}{z} \div \frac{z + 10}{z + 2}$

16) $\frac{z^2 + 7z + 10}{z^2 + 8z + 15} \div \frac{z^2 + 2z}{z^2 + 7z + 12}$

Perform the indicated operation.

17) $\frac{y}{y - 6} + \frac{9}{6 - y}$

Perform the indicated operation and simplify.

18) $\frac{7}{x - 3} - \frac{4}{x^2 - 9}$

19) $\frac{4}{y^2 - 3y + 2} + \frac{5}{y^2 - 1}$

Perform the indicated operations and simplify.

20) $\frac{5x}{x + 1} + \frac{6}{x - 1} - \frac{10}{x^2 - 1}$

21) $\frac{2}{x - 4} - \frac{x}{x - 1} + \frac{x^2 + 2}{x^2 - 5x + 4}$

Simplify.

22) $\frac{\frac{9}{x} - \frac{x}{9}}{\frac{1}{9} - \frac{1}{x}}$

23) $\frac{\frac{y}{5 - y} + \frac{5 + y}{y}}{\frac{5 - y}{y} + \frac{y}{5 + y}}$