

Give the set of excluded values of variable:

1. $\frac{1}{5x}$
2. $\frac{1}{2y}$
3. $\frac{3a + 4}{a - 6}$
4. $\frac{b^2 - 1}{b + 3}$
5. $\frac{x}{5x + 10}$
6. $\frac{t}{6t - 18}$
7. $\frac{a - 7}{a - 7}$
8. $\frac{c + 2}{c + 2}$
9. $\frac{d + 4}{d^2}$
10. $\frac{x - 3}{x^2}$
11. $\frac{3t - 15}{15 - 3t}$
12. $\frac{7k - 35}{35 - 7k}$
13. $\frac{4c + 16}{c^2 - 8c + 12}$
14. $\frac{9d - 18}{d^2 + 9d + 14}$
15. $\frac{1}{5p^2 + 14p - 3}$
16. $\frac{1}{7g^2 - 5g - 2}$
17. $\frac{a - 2}{a^2 - 4}$
18. $\frac{b - 3}{b^2 - 9}$
19. $\frac{3y - 5}{y^2 + 9}$
20. $\frac{2x + 1}{x^2 + 4}$
21. $\frac{x + 4}{x^2 - 16}$
22. $\frac{2z + 3}{z^2 - 8z + 15}$
23. $\frac{3x - 8}{x^2 + 8x + 12}$
24. $\frac{-2}{t^2 - 3t - 28}$
25. $\frac{1}{r^2 + 5r - 14}$
26. $\frac{2n}{3n^2 - 5n - 2}$
27. $\frac{-2r + 4}{5r^2 - 11r + 6}$
28. $\frac{k + 7}{k^2 - 49}$
29. $\frac{a - 8}{a^2 - 64}$

Write each fraction in lowest terms, noting all restrictions:

$$1. \frac{5c + 5d}{6c + 6d}$$

$$2. \frac{4r(s - 2t)}{2r^4(s - 2t)}$$

$$3. \frac{a^2 + ac}{ba + bc}$$

$$4. \frac{3x^2(x - y)}{9x(x - y)}$$

$$5. \frac{ax - ay}{ax}$$

$$6. \frac{9m}{9m + 9n}$$

$$7. \frac{10m^2x^5}{5x^2(m - x)}$$

$$8. \frac{a^2 + 2ab + b^2}{a^2 - b^2}$$

$$9. \frac{c^2 - c - 6}{c^2 + 5c - 24}$$

$$10. \frac{2x(x^2 - y^2)}{6x(x + y)}$$

$$11. \frac{6a^2b(c^2 - 2c - 8)}{8ab^2(c^2 + 3c + 2)}$$

$$12. \frac{x^2 - 2x - 15}{x^2 - 7x + 10}$$

$$13. \frac{4x - 4y}{8x - 8y}$$

$$14. \frac{b^2 + 3b - 18}{b^2 - 10b + 21}$$

$$15. \frac{n^2 - 8n + 16}{n^2 + n - 20}$$

$$16. \frac{a^2 + 12a + 36}{a^2 + 5a - 6}$$

$$17. \frac{b^2 + b - 6}{b^2 - 9}$$

$$18. \frac{c + 2}{c^2 - 4}$$

$$19. \frac{3x + 3y}{3x - 3y}$$

$$20. \frac{bc - bd}{cx - dx}$$

$$21. \frac{4a + 4b}{8a + 8b}$$

$$22. \frac{y^2 - 1}{2y + 2}$$

$$23. \frac{3x + 15}{x^2 - 25}$$

$$24. \frac{2a + 10}{a^2 + 10a + 25}$$

$$25. \frac{x^2 - 4x}{x^2 - 6x + 8}$$

$$26. \frac{x^2 - 1}{x^2 + 2x + 1}$$

$$27. \frac{x^2 - 14x + 49}{x^2 - 49}$$

$$28. \frac{x^2 + 2xy + y^2}{x^2 - y^2}$$

(Continued):

$$29. \frac{b^2 - b - 12}{b^2 + 2b - 15}$$

$$30. \frac{x^2 - 12x + 36}{x^2 + 4x - 48}$$

$$31. \frac{a^2 - 2a + 1}{a^3 + 3a^2 - 4a}$$

$$32. \frac{4c^2 + 16c + 16}{6c^2 + 18c + 12}$$

Simplify each of the following:

$$1. \frac{2x}{5a} \cdot \frac{3a^2}{4x} \cdot \frac{5}{6ax}$$

$$2. \frac{16a^2b^2}{3ac^4} \cdot \frac{25c^2}{32ab^4} \cdot \frac{9ab^3}{5c}$$

$$3. \frac{2b^2m^4}{9ad^2} \cdot \frac{3a^2c^3}{8bx^3} \cdot \frac{6dx^2}{7c^6m}$$

$$4. \frac{12r^3t^8}{25a^6m^2} \cdot \frac{10s^6x^5}{21m^3t^8} \cdot \frac{7a^8}{8r^4x^3}$$

$$5. \frac{a+b}{a-b} \cdot \frac{a-b}{a+b}$$

$$6. \frac{x+6}{x-3} \cdot \frac{x-3}{x+6}$$

$$7. \frac{m-1}{m+5} \cdot \frac{m-5}{m-1}$$

$$8. \frac{a+x}{3ax} \cdot \frac{6ax}{(a+x)^2}$$

$$9. \frac{(b-2)^5}{4b} \cdot \frac{12b^3}{(b-2)^3}$$

$$10. \frac{3xy}{x-2y} \cdot \frac{(x-2y)^4}{4y^2}$$

$$11. \frac{(x-1)(x+5)}{(x-3)(x+5)} \cdot \frac{(x-3)(x-2)}{(x+4)(x-3)}$$

$$12. \frac{(a+c)(b+c)}{(c+d)(a+b)} \cdot \frac{(c+d)(a+2b)}{(b-c)(a+c)}$$

$$13. \frac{3a(x+2)}{5x(a+5)} \cdot \frac{15x(a-5)}{4a(x+2)}$$

$$14. \frac{12xy(x+y)}{7x^2(x-y)} \cdot \frac{35y^3(x-y)}{48x^2y(x-y)(x+y)}$$

Simplify each of the following: (Continued)

15. $\frac{6x + 6y}{x - y} \cdot \frac{5x - 5y}{12}$

16. $\frac{4a^2 + 10}{a - 3} \cdot \frac{a^2 - 9}{6a^2 - 15}$

17. $\frac{(a + b)^2}{a^2 - b^2} \cdot \frac{ax - bx}{ay + by}$

18. $\frac{4x + 8}{6x - 24} \cdot \frac{9x - 36}{2x + 4}$

19. $\frac{a^2 - 8a + 16}{a^2 + 3a - 10} \cdot \frac{a^2 + 2a - 8}{a^2 - 16}$

20. $\frac{b^2 - b - 12}{b^2 - 6b + 8} \cdot \frac{b^2 - 4}{b^2 + 5b + 6}$

21. $\frac{x^2 + x - 2}{x^2 - 7x} \cdot \frac{x^2 - 13x + 42}{x^2 + 2x}$

22. $\frac{m^2 - 7m + 12}{m^2 - m - 6} \cdot \frac{m^2 + 7m + 10}{m^2 + m - 20}$

23. $\frac{x^2 + 5xy + 6y^2}{x^2 + 4xy - 5y^2} \cdot \frac{x^2 + 3xy - 10y^2}{x^2 + xy - 6y^2}$

24. $\frac{m^2 + 7mn + 10n^2}{m^2 + mn - 2n^2} \cdot \frac{m^2 - 5mn + 4n^2}{m^2 + mn - 20n^2}$

25. $3x \cdot \frac{y}{3}$

26. $\frac{b}{a^3} \cdot 4a^2$

27. $6c^4 \cdot \frac{a}{6c^4}$

28. $\frac{8m^3n}{15x^2} \cdot 10x^3$

Simplify each of the following: (Continued)

$$29. \frac{x + y}{2} \cdot 10$$

$$30. 4 \cdot \frac{r - d}{3}$$

$$31. 3x^2y^3 \cdot \frac{4x - y}{9x}$$

$$32. (r + 7) \cdot \frac{5r}{(r - 7)}$$

$$33. (m + 6)(m - 2) \cdot \frac{12m}{(m + 6)(m - 2)}$$

$$34. 16(b + 3)(b - 5) \cdot \frac{b + 9}{8(b + 3)}$$

Simplify each. Write answer in lowest terms.

$$1. \frac{a^2 - b^2}{a^2 - 16} \cdot \frac{a + 4}{a + b}$$

$$2. \frac{y^2 - 4}{y^2 - 1} \cdot \frac{y - 1}{y - 2}$$

$$3. \frac{z^2 - 2z - 3}{3z^2} \cdot \frac{6z}{z + 1}$$

$$4. \frac{t^2 - 2t + 1}{4t} \cdot \frac{8t^2}{t - 1}$$

$$5. \frac{x^2 + 5x + 6}{2x - 2} \cdot \frac{x^2 - x}{x + 3}$$

$$6. \frac{n^2 - 3n - 4}{n^2 - 2n} \cdot \frac{n - 2}{n + 1}$$

$$7. \frac{r^2 - r - 20}{r^2 + 7r + 12} \cdot \frac{r^2 + 9r + 18}{r^2 - 7r + 10}$$

$$8. \frac{p^2 + p - 2}{p^2 - 3p + 2} \cdot \frac{p^2 - p - 2}{p^2 + 5p + 6}$$

$$9. \frac{x - y}{x^2 + xy} \cdot \frac{x^2 - y^2}{x^2 - xy}$$

$$10. \frac{r^2 + s^2}{r^2 - s^2} \cdot \frac{r - s}{r + s}$$

$$11. \frac{n^2 - 11n + 30}{n^2 - 6n + 9} \cdot \frac{n^2 - 3n}{n^2 - 5n}$$

$$12. \frac{t^2 - 2t - 3}{t^2 - 9} \cdot \frac{t^2 + 5t - 6}{t^2 - 1}$$

$$13. \frac{a^2 - 4}{a^2 - 5a + 6} \cdot \frac{a^2 - 2a - 3}{a^2 + 3a + 2}$$

$$14. \frac{c^2 - d^2}{c^2 + 4cd + 3d^2} \cdot \frac{c^2 + cd - 6d^2}{c^2 + cd - 2d^2}$$

$$15. \frac{2a^2 - a - 3}{6a^2 - 13a + 6} \cdot \frac{3a^2 - 2a}{a + 1}$$

Simplify each. Write answer in lowest terms. (Continued)

$$16. \frac{z^2 - z - 6}{z^3 - 9z} \cdot \frac{z + 3}{3z + 9}$$

$$17. \frac{u^2 + 3u + 2}{u^2 + u} \cdot \frac{u^2 + 3u}{u^2 + 5u + 6}$$

$$18. \frac{b^2 + 5bc + 4c^2}{bc + 4c^2} \cdot \frac{b^2 + 5bc}{b^2 + 6bc + 5c^2}$$

$$19. \frac{n^2 + 4n + 3}{n^2 - 1} \cdot \frac{n^2 - 2n + 1}{n + 3} \cdot \frac{n + 1}{n - 1}$$

$$20. \frac{3t^2 - 27}{t^2 + t - 6} \cdot \frac{t^2 + 3t}{6} \cdot \frac{2t - 4}{t - 3}$$

Simplify each. Write answer in lowest terms.

1. $\frac{4b + 16}{3b^2} \cdot \frac{9b}{5b + 20}$
2. $\frac{8n + 24}{2n - 6} \cdot \frac{3n - 9}{4n + 12}$
3. $\frac{x^2 + 4x + 4}{x - 4} \cdot \frac{x - 4}{3x + 6}$
4. $\frac{x^2 - 2x + 1}{x + 1} \div (x - 1)$
5. $\frac{y^2 - 4y + 4}{y + 2} \div (y - 2)$
6. $\frac{x^2 - 9}{x + 2} \div \frac{x^2 + 6x + 9}{2x + 4}$
7. $\frac{m^2 - 4}{m - 2} \div \frac{m^2 - 4m + 4}{3m - 6}$
8. $\frac{x^2 - x - 12}{x^2 - 9} \div \frac{3x - 12}{x + 3}$
9. $\frac{y^2 - 2y - 15}{y^2 - 9} \div \frac{2y - 10}{y + 3}$
10. $\frac{m^2 + 8m + 16}{m + 4} \div \frac{m^2 - 16}{m - 4}$
11. $\frac{x^2 - 6x + 9}{x - 3} \div \frac{x^2 - 9}{x + 3}$
12. $\frac{a - 5}{a^2 + 3a - 10} \div \frac{5a - 25}{a^2 - 2a}$
13. $\frac{7b - 21}{b^2 - 4b} \div \frac{b - 3}{b^2 - 6b + 8}$
14. $\frac{m^2 + 2m}{4m - 5} \div \frac{2m^2 + 4m}{16m - 20}$
15. $\frac{x^2 - 3x}{3x + 7} \div \frac{2x^3 - 6x^2}{9x + 21}$
16. $\frac{x + 2}{x^2 + x - 6} \div \frac{x^2 - 4}{2 - x}$
17. $\frac{r^2 - 3r}{9 - r^2} \div \frac{r}{3 + r}$
18. $\frac{m^2 - m - 6}{m^2 - 9} \div \frac{m + 2}{m + 3}$
19. $\frac{a^2 - 2a + 1}{a + 1} \div (a - 1)$
20. $\frac{a^2 - 6a + 9}{2a + 6} \div \frac{a - 3}{a + 3}$

Add or subtract as indicated:

1. $\frac{a+2}{a-4} + \frac{2a}{a-2}$

2. $\frac{x+5}{x-6} + \frac{3x}{x+5}$

3. $\frac{2b}{b+2} + \frac{b+2}{b-2}$

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

5. $\frac{x-2}{x-4} - \frac{5}{3x}$

6. $\frac{a}{a-b} + \frac{a+b}{ab}$

7. $\frac{2x}{x-1} - \frac{x+3}{x+2}$

8. $\frac{3b}{b-2} - \frac{b+4}{b-3}$

9. $\frac{5c}{c-2} - \frac{c-1}{c+2}$

10. $\frac{a+5}{a-5} + \frac{a-5}{a+5}$

11. $\frac{c-d}{c+d} - \frac{c+d}{c-d}$

12. $\frac{m-2n}{m+2n} - \frac{m+2n}{m-2n}$

13. $\frac{1}{b-3} - \frac{4}{b-6} + \frac{5}{6}$

14. $\frac{3}{x} + \frac{2}{x-y} - \frac{1}{x+y}$

15. $\frac{b}{5} + \frac{4x^2}{5(b+4x)}$

16. $\frac{2a}{a+b} - \frac{8b}{3(a+b)}$

17. $\frac{6}{(x+5)(x+5)} + \frac{2}{x+5}$

18. $\frac{2b-7}{(b-2)(b+5)} + \frac{b+5}{b-2}$

19. $\frac{8}{a+x} + \frac{4x}{(a+x)^2}$

20. $\frac{x}{(x-4)^2} - \frac{1}{x-4}$

21. $\frac{9}{(a-6)^2} + \frac{a+4}{a-6}$

22. $\frac{5}{(c-5)^2} - \frac{c+5}{c-5}$

23. $\frac{5}{2(a+1)} + \frac{2}{3(a+1)}$

24. $\frac{4d}{5(d-2)} - \frac{3d}{10(d-2)}$

25. $\frac{3a}{4(a+3)} + \frac{3}{5(a-3)}$

26. $\frac{7c}{10(c+d)} - \frac{5d}{16(c-d)}$

27. $\frac{2x}{(x-1)(x+3)} - \frac{x}{(x-1)(x+2)}$

28. $\frac{x-2}{2(x+3)(x-3)} + \frac{x+3}{3(x-3)(x+2)}$

Add or subtract as indicated:

$$1. \frac{2}{x+3} + \frac{3}{2x+6}$$

$$2. \frac{2}{a^2+a} + \frac{2}{a+1}$$

$$3. \frac{c^2}{3c-3d} - \frac{c+d}{3}$$

$$4. \frac{x+3}{x-3} - \frac{x+3}{4x-12}$$

$$5. \frac{5}{x^2-4} + \frac{3}{x+2}$$

$$6. \frac{t+7}{t-7} - \frac{14t}{t^2-49}$$

$$7. \frac{3}{a^2+6a-16} + \frac{3}{a+8}$$

$$8. \frac{m-4}{m-6} - \frac{3m}{m^2-3m-18}$$

$$9. \frac{2x^2+5x}{x^2-8x-20} - \frac{x-2}{x-10}$$

$$10. \frac{2t^2+7}{t^2+t-2} + \frac{t-3}{t+2}$$

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

$$12. \frac{c-2}{c+2} + \frac{10c-4}{c^2-4} - \frac{c+2}{c-2}$$

$$13. \frac{15}{c^2-12c+36} + \frac{3c}{c-6}$$

$$14. \frac{4-b}{b^2-8b+16} + \frac{2}{b-4}$$

$$15. \frac{x-2}{x-1} - \frac{3-3x}{x^2-2x+1}$$

Add or subtract as indicated: (Continued)

$$16. \frac{2}{a+2} + \frac{4}{(a+2)^2}$$

$$17. \frac{8x}{(x+4)^2} - \frac{4}{x+4}$$

$$18. \frac{c+4}{(c-4)^2} - \frac{c+4}{c-4}$$

$$19. \frac{2a+3b}{2a+2b} + \frac{a}{3a+3b}$$

$$20. \frac{c+2d}{4c-4d} - \frac{d}{3c-3d}$$

$$21. \frac{2}{2x-8} + \frac{3}{4x-2}$$

$$22. \frac{b-2x}{4b+2x} - \frac{2b-x}{2b+4x}$$

$$23. \frac{5}{3x+15} + \frac{4}{x^2-25}$$

$$24. \frac{c+5d}{c^2-d^2} - \frac{2d}{c^2-cd}$$

$$25. \frac{a-4}{2a-10} + \frac{a}{a^2-10a+26}$$

$$26. \frac{4x}{3x^2-3y^2} - \frac{x-y}{x^2+2xy+y^2}$$

$$27. \frac{x}{x^2+5x+4} - \frac{1}{x^2+2x+1}$$

$$28. \frac{2n}{5n^2-5n-30} + \frac{3n}{4n^2+20n+24}$$

$$29. \frac{2}{x^2-4} - \frac{3}{x^2-4x+4} + \frac{4}{x^2+x-2}$$

$$30. \frac{6}{b^2-10b+25} + \frac{2}{b^2-2b-15} + \frac{3}{b^2-9b+20}$$

Simplify each:

1. $\frac{3}{x+2} + \frac{5}{x-2}$
2. $\frac{x}{x+1} - \frac{x}{x-1}$
3. $\frac{5}{x+7} + \frac{2}{x-3}$
4. $\frac{a}{a+b} - \frac{2}{a^2+2ab+b^2}$
5. $\frac{3a}{a-b} + \frac{2a}{a+b} - \frac{5}{a^2-b^2}$
6. $\frac{5a}{a+5} + \frac{2a}{a-5} - \frac{3}{a^2-25}$
7. $\frac{3}{x^2-x-2} - \frac{2}{x^2-4}$
8. $\frac{3}{x+1} + \frac{2}{x+2} - \frac{1}{x+3}$
9. $\frac{x}{a-b} + \frac{x}{a+b}$
10. $\frac{x+2}{x^2-9} + \frac{x+3}{x^2-3x}$
11. $\frac{x-5}{x^2-3x+2} - \frac{x+1}{x^2-4x+3}$
12. $\frac{a}{a+b} + \frac{1}{a^2-b^2} - \frac{b}{a-b}$
13. $\frac{3m}{m+2} + \frac{4m}{m+5} + \frac{2}{m^2+7m+10}$
14. $\frac{m}{m-n} + \frac{n}{n-m}$
15. $\frac{3x}{x-y} - \frac{2y}{y-x}$
16. $\frac{3}{a-b} - \frac{5}{b-a}$
17. $\frac{x}{a-b} - \frac{x}{b-a}$
18. $\frac{3x}{x-2} - \frac{2x}{x-1} + \frac{5}{x^2-3x+2}$
19. $\frac{6a}{2a+1} + \frac{5a}{a+3} - \frac{2}{2a^2+7a+3}$
20. $\frac{x-2}{x-3} \cdot \frac{x+2}{x+4} - \frac{x^2+5x-6}{x^2+x-12}$
21. $\frac{a^2-b^2}{a^2+2ab+b^2} - \frac{b}{a+b}$
22. $\frac{m^2+n^2}{(m+n)^2} - \frac{m^2-n^2}{m^2+2m+n^2}$
23. $\frac{5}{x^2+7x+10} - \frac{2}{x^2+5x+6}$
24. $\frac{3x}{x^2-9} - \frac{2x}{x^2-5x+6}$
25. $\frac{4x-7}{x^2-3x+2} + \frac{3}{x-1}$
26. $\frac{6m-13}{m^2-5m+6} + \frac{5}{m-3}$
27. $\frac{x}{x^2-25} - \frac{1}{2x+10}$
28. $\frac{27}{x^2-81} + \frac{3}{2x+18}$
29. $\frac{2a+3b}{3a^2b} - \frac{a+2b}{4ab^2} - \frac{1}{6ab}$
30. $\frac{2}{x-1} - \frac{3}{1+x} - \frac{x-5}{1-x^2}$

Simplify each: (Continued)

$$31. \quad \frac{3}{2+n} + \frac{2}{n-2} + \frac{5n-2}{4-n^2}$$

$$32. \quad \frac{2}{3+y} + \frac{5}{y^2-9} + \frac{2y-1}{3-y}$$

Simplify each:

$$1. \frac{1}{3y^2 - 2xy} + \frac{1}{2x^2 - 3xy}$$

$$2. \frac{1}{2y - x} + \frac{1}{2y + x} - \frac{4y}{4y^2 - x^2}$$

$$3. \frac{x}{x + y} + \frac{2xy}{x^2 - y^2} - \frac{y}{y - x}$$

$$4. \frac{3}{2x^2 - 5x - 12} - \frac{x}{x^2 - 16}$$

$$5. \frac{3m}{9m^2 - 25} - \frac{2m - 3}{6m^2 - m - 15}$$

$$6. \frac{4}{4a^2 - 1} + \frac{5}{1 - a - 6a^2}$$

$$7. \frac{1}{x^2 - 5xy + 6y^2} - \frac{4}{4y^2 - x^2}$$

$$8. \frac{yz}{y^2 - z^2} - \frac{y^2}{yz - z^2} + \frac{y}{z}$$

$$9. \frac{2}{a^2 - 1} + \frac{a - 2}{a - 1} - \frac{a + 1}{a + 2}$$

$$10. \frac{2z - 3}{24} + \frac{3z - 5}{36}$$

$$11. \frac{27}{x^2 - 81} + \frac{3}{2x + 18}$$

$$12. \frac{3}{x^2 - 25} - \frac{1}{5 + x} - \frac{x + 1}{5 - x}$$

$$13. \frac{a - 2}{(a + 2)^2} + \frac{a}{6(a + 2)} - \frac{1}{36}$$

$$14. \frac{x + 1}{(x - 1)^2} - \frac{x}{x - 1} + \frac{1}{x - 1}$$

$$15. \frac{a - 6b}{2a^2 + 5ab + 2b^2} + \frac{3}{2a + b} - \frac{7}{a + 2b}$$

Simplify each: (Continued)

16.
$$\frac{x + 4}{x^2 + 3x - 10} - \frac{x - 4}{x^2 - 5x + 6}$$

17.
$$\frac{5}{3a - 12} - \frac{a^2}{a^2 + a - 20} - 1$$

18.
$$\frac{2}{2 - a} + \frac{1}{a^2 - 4} + \frac{3}{a + 2}$$

19.
$$\frac{4r + 3}{r - 1} - \frac{r}{r^2 + 2r - 3}$$

20.
$$\frac{2}{2 - a} + \frac{1}{a^2 - 4} + \frac{3}{a + 2}$$

21.
$$\frac{x + 2}{x^2 + 7x + 12} - \frac{x + 1}{x^2 - 3x - 18} + \frac{x - 2}{x^2 - 2x - 24}$$

22.
$$\frac{x}{x^2 - 9x + 18} - \frac{x - 2}{x^2 - 10x + 24}$$

Simplify each:

1.
$$\frac{2x - y}{4y} - \frac{x - 3y}{6x}$$

2.
$$\frac{2}{c^2 - d^2} - \frac{3}{c + d}$$

3.
$$\frac{y}{y + 2} - \frac{y}{y - 2}$$

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

5.
$$\frac{3a}{2a + 6} - \frac{a - 1}{a + 3}$$

6.
$$\frac{a - 2}{(a + 2)^2} + \frac{a}{5(a + 2)} - \frac{1}{25}$$

7.
$$\frac{x + 1}{(x - 1)^2} - \frac{x}{x^2 - 1} + \frac{1}{x - 1}$$

8.
$$\frac{y - 6z}{2y^2 + 5yz + 2z^2} + \frac{3}{2y + z} - \frac{7}{y + 2z}$$

9.
$$\frac{x - y}{(x + y)^2} - \frac{x}{x^2 - y^2} - \frac{1}{x - y}$$

10.
$$\frac{x + 1}{x - 1} - \frac{3x^2 - 1}{1 - x^2}$$

11.
$$\frac{x^2 - 1}{3x + 3} - \frac{x^2 - 1}{4x + 4}$$

12.
$$\frac{2n - 3}{n - 5} + \frac{2}{5 - n}$$

13.
$$\frac{a}{a + 2} + \frac{6}{a - 2} - \frac{8}{4 - a^2}$$

14.
$$\frac{y + 1}{y + 2} - \frac{2}{y + 4} + \frac{4}{y^2 + 6y + 8}$$

15.
$$\frac{1}{(x - 3)^2} + \frac{12}{(x + 3)^2} - \frac{8}{x^2 - 9}$$

Simplify each: (Continued)

$$16. \frac{m+5}{2m^2-2} + \frac{3}{1-m} + \frac{5}{2m+2}$$

$$17. \frac{x+6}{4-x^2} - \frac{x+3}{x+2} + \frac{x-3}{2-x}$$

$$18. \frac{m+n}{m^2+4mn+4n^2} - \frac{m-n}{2n+m}$$

$$19. \frac{2rs+r^2}{2s^2-3rs+r^2} + \frac{r-s}{2s-r}$$

$$20. \frac{2x}{1-2x} + \frac{3x}{2x+1} - \frac{3}{4x^2-1}$$

$$21. \frac{-x}{2} + \frac{x}{x+1} - \frac{x+1}{2x+2}$$

$$22. \frac{-2}{y} + \frac{4y}{y^2-1} - \frac{2}{y+1}$$

$$23. \frac{1}{x-2y} - \frac{6xy}{x^2-4y^2}$$

$$24. \frac{x}{x-y} + \frac{x^2+y^2}{y^2-x^2} + \frac{y}{x+y}$$

Simplify each:

1. $\frac{x+1}{x+2} - \frac{x+2}{x+3}$

2. $\frac{2x}{x^2 - 5x + 6} + \frac{3}{x-2}$

3. $\frac{2x-3}{x^2 - 3x - 18} + \frac{2}{x-6}$

4. $\frac{2a-1}{12a^2} - \frac{3-a}{2a} + \frac{a}{4}$

5. $\frac{1}{a^2 - a - 2} + \frac{1}{a^2 + 2a + 1}$

6. $\frac{2}{16y^2} - \frac{y+3}{8y} + \frac{y-2}{2y}$

7. $\frac{3x}{x^2 + 3x + 2} - \frac{3x-6}{x^2 + 4x + 4}$

8. $\frac{8}{c^2 - 4} + \frac{2}{c^2 - 5c + 6}$

9. $a - \frac{2a}{a^2 - 1} + \frac{3}{a+1}$

10. $\frac{4}{a^2 - 25} + \frac{2}{a+5} + \frac{a+2}{5-a}$

11. $\frac{x}{x^2 - 16} + \frac{6}{4-x} - \frac{1}{x-4}$

12. $8 + \frac{2a-7b}{a+b}$

13. $\frac{11}{y-3} - 13$

14. $d + 3 + \frac{2d-1}{d-2}$

15. $h + 2 - \frac{h+1}{h-1}$

Simplify each: (Continued)

16. $\frac{m}{n} + 3 + \frac{n}{m}$

17. $h + 1 - \frac{1}{h - 1}$

18. $x - 3 - \frac{2}{3 - x}$

19. $\frac{c - d}{cd^2} - \frac{3c - 3d}{c^2d}$

20. $\frac{a + b}{2a} - \frac{a - b}{3b} + \frac{b - c}{c}$

21. $\frac{3x + 6}{2x} + \frac{5y + 4}{2y}$

22. $\frac{c + d}{2cd^2} - \frac{c - d}{6c^2d}$

23. $\frac{3x}{x - 5} - \frac{x - 2}{x + 5}$

24. $\frac{4y}{3 - y} - \frac{y - 3}{y + 3}$

Simplify each:

$$1. \frac{3}{x^2 - 25} - \frac{1}{5 + x} - \frac{x + 1}{5 - x}$$

$$2. \frac{y + 1}{y + 2} - \frac{y + 2}{y + 3}$$

$$3. \frac{x - 1}{x + 1} - \frac{x + 1}{x - 1}$$

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

$$5. \frac{3y - 4}{y^2 - y - 20} + \frac{2}{y - 5}$$

$$6. \frac{1}{x^2 - x - 2} - \frac{3}{x^2 + 2x + 1}$$

$$7. \frac{3y}{y^2 + 3y - 10} - \frac{2y}{y^2 + y - 6}$$

$$8. \frac{3}{x + 2} + \frac{5}{x - 2} + \frac{2x - 5}{4 - x^2}$$

$$9. \frac{4}{r^2 - 25} - \frac{2}{r + 5} - \frac{r + 2}{5 - r}$$

$$10. \frac{1}{t^2 - 5t + 6} - \frac{1}{4 - t^2} + \frac{1}{6 + t - t^2}$$

$$11. \frac{p + 1}{p^2 - 2p - 3} - \frac{1}{p^2 + p} - \frac{3}{p^2 - 3p}$$

$$12. \frac{r}{r^2 - 25} - \frac{1}{2r + 10}$$

$$13. \frac{\frac{x}{y} - 2}{1 + \frac{x}{y}}$$

Simplify each: (Continued)

$$14. \frac{\frac{x^2 + y^2}{xy} - 2}{\frac{4x^2 - 4y^2}{2xy}}$$

$$15. \frac{x + 2 - \frac{12}{x + 3}}{x - 5 + \frac{16}{x + 3}}$$

$$16. \frac{n - \frac{2}{n + 1}}{n + \frac{n - 3}{n + 1}}$$

$$17. \frac{\frac{x^2 + y^2}{x^2 - y^2}}{\frac{\frac{x - y}{x + y} - \frac{x + y}{x - y}}$$

$$18. \frac{x + \frac{2x + 1}{x - 1}}{x + \frac{2}{x - 1}}$$

$$19. \frac{\frac{2}{a - 1} + \frac{a - 1}{a + 1}}{1 + \frac{a + 1}{a - 1}}$$

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

$$21. \frac{\frac{r - s}{r^2 + s^2} - \frac{1}{r}}{\frac{r - s}{r^2 + s^2} - \frac{1}{s}}$$

Simplify each:

$$1. \frac{x - 5 + \frac{6}{x}}{x + 1 - \frac{6}{x}}$$

$$2. \frac{1 - \frac{1}{x}}{1 - \frac{2x - 1}{x^2}}$$

$$3. \frac{1 - \frac{2s}{r - s}}{\frac{r}{3s} - \frac{3s}{r}}$$

$$4. \frac{\frac{2a}{a - b} - \frac{1}{2}}{\frac{a}{a - b} - 1}$$

$$5. \frac{4 - \frac{1}{y + 1}}{16 + \frac{7}{y^2 - 1}}$$

$$6. \frac{\frac{2x}{3y} - 2 + \frac{3y}{2x}}{\frac{2}{y} - \frac{3}{x}}$$

$$7. \frac{\frac{c}{d^2} + \frac{d}{c^2}}{\frac{1}{c^2} - \frac{1}{cd} + \frac{1}{d^2}}$$

$$8. \frac{a - \frac{a - x}{1 + ax}}{1 + \frac{a^2 - ax}{1 + ax}}$$

$$9. \frac{\frac{1}{1 + a} + \frac{1}{1 - a}}{\frac{1}{1 + a} - \frac{1}{1 - a}}$$

$$10. \frac{\frac{x}{x + y} - \frac{x - y}{x}}{\frac{x}{x - y} - \frac{x + y}{x}}$$

$$11. \frac{\frac{a}{a - x} - \frac{a}{a + x}}{\frac{x}{a - x} + \frac{a}{a + x}}$$

$$12. \frac{\frac{a + b}{a - b} + \frac{a - b}{a + b}}{\frac{a + b}{a - b} - \frac{a - b}{a + b}}$$

$$13. \frac{1 + \frac{x}{y}}{\frac{x}{y} - 1}$$

$$14. \frac{2 - \frac{1}{a}}{2 + \frac{1}{a} - \frac{1}{a^2}}$$

$$15. \frac{x - 1 - \frac{6}{x}}{x + 1 + \frac{2}{x}}$$

$$16. \frac{x - \frac{9}{x}}{x + 4 + \frac{3}{x}}$$

$$17. \frac{1}{1 - \frac{1}{1 + a}}$$

$$18. \frac{1}{1 - \frac{1}{1 - a}}$$

1. $\frac{r}{8} = \frac{5}{6}$
2. $\frac{a}{25} = \frac{12}{10}$
3. $\frac{3}{16} = \frac{y}{6}$
4. $\frac{b}{4} = \frac{1}{6}$
5. $\frac{15}{8} = \frac{x}{10}$
6. $\frac{7m}{9} = \frac{14}{3}$
7. $\frac{15}{2} = \frac{5a}{12}$
8. $\frac{3}{4} = \frac{3b}{16}$
9. $\frac{9b}{10} = \frac{3}{4}$
10. $\frac{3x}{9} = \frac{1}{6}$
11. $\frac{n+4}{9} = \frac{5}{9}$
12. $\frac{1}{4} = \frac{x+1}{8}$
13. $\frac{a+2}{2} = 2$
14. $\frac{t-5}{6} = 7$
15. $\frac{x-2}{6} = \frac{3}{4}$
16. $\frac{4x+5}{6} = \frac{7}{2}$
17. $\frac{4}{5} = \frac{5x-9}{20}$
18. $7 = \frac{y-2}{4}$
19. $\frac{x+2}{4} = \frac{x}{2}$
20. $\frac{a+8}{3} = \frac{a}{5}$
21. $b = \frac{5b+3}{6}$
22. $\frac{c-2}{6} = \frac{c}{4}$
23. $\frac{x}{5} = \frac{x-3}{2}$
24. $\frac{a}{8} = \frac{2a-5}{6}$
25. $\frac{3b+7}{5} = \frac{2b}{3}$
26. $\frac{5a-6}{5} = \frac{2a}{5}$
27. $\frac{x+2}{2} = \frac{x+6}{4}$
28. $\frac{b-2}{8} = \frac{b+4}{24}$
29. $\frac{x-5}{4} = \frac{x-2}{3}$
30. $\frac{5-x}{6} = \frac{2+x}{8}$
31. $\frac{3x+1}{5} = \frac{2x+5}{5}$
32. $\frac{6x+7}{10} = \frac{2x+9}{6}$
33. $\frac{3b+34}{14} = \frac{b+44}{21}$
34. $\frac{2a-5}{15} = \frac{3a-20}{10}$

35. $\frac{6 - c}{2} = \frac{2c + 9}{4}$

36. $\frac{x}{3} + \frac{x}{2} = 10$

37. $\frac{a}{4} - \frac{a}{8} = 3$

38. $4 = \frac{b}{6} + \frac{b}{3}$

39. $2 = \frac{x}{3} - \frac{x}{5}$

40. $\frac{r}{9} + 4 = 6$

41. $\frac{n}{10} = 9 - \frac{n}{5}$

42. $x = \frac{x}{3} + 4$

43. $6 = c - \frac{c}{7}$

44. $9 - \frac{3x}{4} = 0$

45. $\frac{x}{10} + \frac{x}{5} = \frac{9}{10}$

46. $\frac{n}{6} + \frac{n}{3} = \frac{1}{2}$

47. $\frac{x}{3} - \frac{x}{4} = \frac{1}{12}$

48. $\frac{a}{8} - \frac{a}{12} = \frac{1}{8}$

49. $\frac{35}{48} = \frac{x}{16} + \frac{x}{12}$

50. $\frac{9}{40} = \frac{c}{8} - \frac{c}{10}$

51. $\frac{b}{8} + \frac{3}{4} = \frac{b}{5}$

52. $\frac{5y}{6} + \frac{2y}{3} = \frac{9}{2}$

53. $\frac{4x}{5} - \frac{3x}{8} = \frac{17}{4}$

54. $x + \frac{x}{2} + \frac{x}{3} = 22$

55. $a - \frac{a}{2} + \frac{a}{4} = 6$

56. $y + \frac{y}{2} + \frac{y}{3} + \frac{y}{4} = 50$

57. $b - \frac{b}{3} + \frac{b}{5} = 26$

58. $x = 1 + \frac{x}{2} + \frac{x}{4} + \frac{x}{8} + \frac{x}{16}$

59. $\frac{x}{2} + \frac{2x}{3} + \frac{3x}{4} = 32$

60. $\frac{5n}{6} + \frac{n}{4} + \frac{2n}{3} = 42$

61. $\frac{3x}{2} - \frac{5x}{16} - \frac{3x}{8} = 52$

Solve each:

$$1. \frac{6 - x}{6x} = \frac{1}{x + 1}$$

$$2. \frac{r + 1}{r - 1} = \frac{2}{r^2 - r}$$

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

$$4. \frac{x - 5}{8x} = \frac{3}{x + 5}$$

$$5. \frac{4}{s} - 3 = \frac{5}{2s + 3}$$

$$6. \frac{4}{3a} + \frac{3}{3a + 1} = -2$$

$$7. 1 + \frac{2}{b - 1} = \frac{2}{b^2 - b}$$

$$8. \frac{1}{k^2 - k} = \frac{3}{k} - 1$$

$$9. \frac{14}{y - 6} = \frac{1}{2} + \frac{6}{y - 8}$$

$$10. \frac{2}{r - 3} + 1 = \frac{6}{r - 8}$$

$$11. \frac{7}{p - 3} - \frac{1}{2} = \frac{3}{p - 4}$$

$$12. \frac{4}{g - 2} - \frac{2}{15} = \frac{7}{g - 3}$$

$$13. \frac{3x - 1}{x + 3} + 3 = \frac{4x}{x - 3}$$

$$14. \frac{k + 2}{k - 2} - \frac{2}{k + 2} = -\frac{7}{3}$$

$$15. \frac{2x + 11}{x + 4} + \frac{x - 2}{x - 4} - \frac{12}{x^2 - 16} = \frac{7}{2}$$

Solve each: (Continued)

$$16. \frac{2c}{2c - 3} = \frac{15 - 32c^2}{4c^2 - 9} + \frac{3c}{2c + 3}$$

$$17. \frac{x - 2}{x^2 - x - 6} = \frac{1}{x^2 - 4} + \frac{3}{2x + 4}$$

$$18. \frac{y - 4}{2y^2 + 5y - 3} = \frac{4y - 1}{4y^2 + 13y + 3} - \frac{2y + 7}{8y^2 - 2y - 1}$$

$$19. x - \frac{2}{x - 3} = \frac{x - 1}{3 - x}$$

$$20. \frac{60}{y^2 - 36} + 1 = \frac{5}{y - 6}$$

$$21. \frac{5}{y - 3} + \frac{6}{3 - y} = \frac{1}{2}$$

$$22. \frac{16}{3x - 1} - \frac{4}{1 - 3x} = 1$$

$$23. \frac{2x + 1}{2x - 1} = \frac{x + 3}{x + 1}$$

$$24. \frac{x}{x - 3} = \frac{1 - x}{x - 1}$$

$$25. \frac{2x}{2x - 1} = \frac{x + 4}{x + 3}$$

$$26. \frac{1}{2x + 3} = \frac{3}{8x + 7}$$

$$27. \frac{x + 1}{x - 1} = \frac{x + 3}{x}$$

$$28. \frac{2}{3m + 12} - \frac{1}{9m - 3} - \frac{m - 2}{3m^2 + 11m - 4} = 0$$

$$29. \frac{2t + 3}{t - 1} - 4 - \frac{2}{t + 3} = \frac{5 - 6t}{t^2 + 2t - 3}$$

$$30. \frac{1}{2d + 3} + \frac{1}{2d + 1} = \frac{2}{4d^2 + 8d + 3}$$

1. $\frac{x}{2} + \frac{x+2}{3} = 9$
2. $\frac{y+1}{4} + \frac{y+5}{2} = 5$
3. $\frac{b+5}{6} + \frac{b+3}{5} = 4$
4. $\frac{c-2}{6} + \frac{c-4}{8} = \frac{3}{2}$
5. $\frac{b+1}{5} + \frac{b+2}{2} = 4$
6. $\frac{a+1}{3} + \frac{a+3}{4} = \frac{a+3}{2}$
7. $\frac{x+2}{4} + \frac{x+4}{6} = \frac{x+1}{2}$
8. $\frac{x+1}{2} + \frac{x+9}{4} = \frac{x-11}{5}$
9. $\frac{d+7}{2} - \frac{d+3}{4} = 4$
10. $\frac{n+4}{3} - \frac{n-5}{6} = 4$
11. $\frac{x+5}{4} - \frac{x+3}{8} = \frac{7}{4}$
12. $\frac{y-1}{12} - \frac{y+1}{16} = \frac{1}{24}$
13. $\frac{x-4}{2} - 2 = \frac{x-6}{4}$
14. $\frac{x-5}{2} - \frac{x-3}{4} = \frac{x-7}{10}$
15. $\frac{a+8}{3} - \frac{a-4}{5} = a$
16. $\frac{m+10}{4} - \frac{m-10}{6} = \frac{m+10}{2}$
17. $\frac{5b+3}{8} + \frac{3b+5}{2} = 5$
18. $6 = \frac{8x-1}{3} + \frac{2x+1}{5}$
19. $\frac{7x-2}{11} - \frac{2x-7}{3} = 1$
20. $\frac{7a+5}{8} - 2 = \frac{3a+15}{10}$
21. $\frac{3x-5}{3} + \frac{5x+3}{6} = \frac{13}{3}$
22. $\frac{4b-3}{6} - \frac{2b-5}{8} = \frac{7b}{16}$
23. $\frac{7m-6}{10} + \frac{4m+3}{5} = \frac{16m-13}{15}$
24. $\frac{4-3x}{8} + 2 = \frac{x-5}{4} - x$

Solve and check:

1. $\frac{n}{6} + \frac{n}{4} = 20$
2. $\frac{5a}{8} + \frac{a}{3} - \frac{7a}{8} = 4$
3. $\frac{x}{2} - \frac{x+2}{5} = 2$
4. $a - \frac{a}{2} - \frac{a}{4} - \frac{a}{8} - \frac{a}{16} = 6$
5. $\frac{3b-4}{6} - \frac{5b-4}{8} = \frac{b+3}{12}$
6. $\frac{2x}{3} - \frac{5x}{12} = \frac{5}{2}$
7. $\frac{x-3}{6} + \frac{x+3}{3} = 5$
8. $\frac{x-5}{10} = \frac{x+4}{4}$
9. $\frac{4y+3}{4} - \frac{5y}{6} = \frac{13}{12}$
10. $\frac{2x+3}{5} + \frac{2x+3}{6} = \frac{3x+4}{4}$

Solve each:

1. $\frac{12}{s+2} = \frac{4}{s-2}$
2. $\frac{7}{t-3} = \frac{2}{t+2}$
3. $\frac{5}{x} = \frac{x-3}{2}$
4. $\frac{6}{z-1} = \frac{z}{2}$
5. $\frac{t}{t-4} = \frac{t+4}{6}$
6. $\frac{5}{v+6} - \frac{v-6}{v}$
7. $\frac{3}{4x} + \frac{1}{x} = \frac{7}{8}$
8. $\frac{2}{3x} + \frac{1}{x} = \frac{5}{9}$
9. $\frac{n+5}{2n} - \frac{7}{3n} = \frac{5}{12}$
10. $\frac{4}{3n} - \frac{n+4}{6n} = 2$
11. $a - \frac{2}{a-3} = \frac{a-1}{3-a}$
12. $c - \frac{c}{1-c} = \frac{2-c}{c-1}$
13. $\frac{4}{3t-2} + \frac{7}{3t} - \frac{1}{t} = 0$
14. $\frac{3}{4k} + \frac{4}{3k-1} - \frac{2}{k} = 0$
15. $\frac{2x}{x+2} - 2 = \frac{x-8}{x-2}$
16. $\frac{4y}{y-3} - 3 = \frac{3y-1}{y+3}$
17. $5c - \frac{c+1}{c+1} + 6 = 0$
18. $4k - \frac{k-1}{k-1} = 3$
19. $\frac{p+2}{3p-6} - \frac{2}{3p+6} + \frac{7}{9} = 0$
20. $\frac{3n-2}{15} - \frac{16-3n}{n+6} = \frac{n+3}{5}$
21. $\frac{5}{2x-1} = 1 - \frac{8x-16}{10x-5}$
22. $\frac{1}{2x-4} = \frac{3}{10} - \frac{x-6}{x-2}$
23. $\frac{a}{a+2} - \frac{a}{a-2} = \frac{a+20}{a^2-4}$
24. $\frac{4}{2+y} - \frac{3}{2-y} + \frac{y+1}{4-y^2} = 0$
25. $\frac{5x^2}{x^2-4} - \frac{3}{x-2} = \frac{5x-1}{x+2}$
26. $\frac{w-1}{w+2} - \frac{w+3}{w-2} = \frac{4}{w^2-4}$
27. $\frac{5}{3t-3} - \frac{2}{t+1} = \frac{1}{3t^2-3}$
28. $\frac{y-7}{y^2+3y-28} - \frac{1}{4-y} = \frac{-2}{y+7}$
29. $\frac{k-2}{k+5} = \frac{k+4}{k-3} - \frac{7}{3}$
30. $1 + \frac{7x}{3x+1} + \frac{2x^2}{21x^2+10x+1} = 0$

$$1. \quad \frac{x - 3}{x + 1} = \frac{x - 6}{x - 5}$$

$$2. \quad \frac{a - 2}{a - 4} = \frac{a - 7}{a + 1}$$

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

$$4. \quad \frac{a + 4}{a - 4} = \frac{a - 4}{a + 4}$$

$$5. \quad \frac{2b}{b + 2} = \frac{2b + 8}{b + 7}$$

$$6. \quad \frac{2x - 5}{3x - 4} = \frac{2x - 3}{3x - 2}$$

$$7. \quad \frac{15}{x} + \frac{9x - 7}{x + 2} = 9$$

$$8. \quad \frac{6a - 12}{a + 3} + \frac{5}{a - 2} = 6$$

$$9. \quad \frac{3b - 2}{b + 1} = 4 - \frac{b + 2}{b - 1}$$

$$10. \quad \frac{2s - 4}{s - 4} - 2 = \frac{20}{s + 4}$$

$$11. \quad \frac{4}{x - 2} + \frac{2}{x - 4} = \frac{30}{x^2 - 2x - 8}$$

$$12. \quad \frac{2}{y - 3} - \frac{4}{y + 3} = \frac{8}{y^2 - 9}$$

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

$$14. \quad \frac{3}{d + 3} + \frac{5}{d + 4} = \frac{12d + 19}{d^2 + 7d + 12}$$

$$15. \quad \frac{c + 2}{c + 1} - \frac{c}{c + 2} = \frac{4c + 1}{c^2 + 3c + 2}$$

$$16. \frac{m+1}{m+3} + \frac{m-3}{m-2} = \frac{2m^2-15}{m^2+m-6}$$

$$17. \frac{6x^2+14}{4x^2-9} - \frac{2x+1}{2x-3} = \frac{x+1}{2x+3}$$

$$18. \frac{y+5}{y^2-4} - \frac{3}{2y-4} = \frac{1}{2y+4}$$

$$19. \frac{5x-7}{2x-3} + \frac{x+2}{2x+3} - \frac{6}{4x^2-9} = 3$$

$$20. \frac{2d}{d-1} - \frac{3}{d^2-1} = 4 - \frac{2d-1}{d+1}$$

$$21. \frac{5t-2}{5t-3} = 1 + \frac{3}{5t+3} + \frac{2t}{25t^2-9}$$

$$22. 2 - \frac{3x-2}{3x-1} = \frac{2x}{3x+1} + \frac{3x^2+20}{9x^2-1}$$

$$23. \frac{2}{4-x} + \frac{3}{4+x} = \frac{17}{16-x^2}$$

$$24. \frac{26}{1-n^2} = \frac{3}{1-n} - \frac{2}{1+n}$$

$$25. \frac{3}{3-x} + \frac{1}{2-x} = \frac{2+3x}{6-5x+x^2}$$

$$26. \frac{1+b}{5-b} - \frac{4}{5+b} = \frac{15+b^2}{25-b^2}$$

$$27. \frac{7x+5}{x+2} + \frac{x+1}{2-x} = 6$$

$$28. \frac{3}{y+3} - \frac{5}{3-y} = \frac{9y+1}{y^2-9}$$

$$29. \frac{4x+1}{x^2-x-6} + \frac{2}{3-x} = \frac{5}{x+2}$$

$$30. \frac{2m^2-25}{m^2-3m+2} + \frac{m-3}{2-m} = \frac{m+2}{m-1}$$

