

Extracting Common Factors

Date: _____

Extract the greatest common factor from each of the following:

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

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

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

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

5. $x - \frac{1}{4}$

6. $\frac{6}{7}x^2 + \frac{4}{7}x + \frac{8}{7}$

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

8. $2x + \frac{2}{3}$

9. $4x - \frac{2}{5}$

10. $5x - \frac{2}{3}$

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

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

13. $\frac{6}{7}x + 3$

14. $\frac{1}{3}x + \frac{1}{4}$

15. $\frac{1}{2}x^2 + \frac{1}{3}x - \frac{3}{8}$

16. $2x^7 - 3x^5 - x^4$

17. $x^3 - 2x^2 - 3x^{-2} - 5x^{-4}$

18. $12x + 4 - 8x^{-3} + 20x^{-6}$

19. $x^4 + x^4 + x^4$

20. $x^{15} + x^7 + x^3$

21. $x^{19} + x^3 + x^{-1}$

22. $\frac{2}{3}x^4 + \frac{5}{3}x - \frac{7}{3}x^{-2}$

23. $5x^{\frac{3}{2}} - 10x^{\frac{1}{2}}$

24. $2x^5 + \frac{7}{2}x^{\frac{2}{3}} + \frac{1}{4}x^{-\frac{4}{3}}$

25. $\frac{3}{5}x^7 + \frac{9}{10}x^{-1}$

26. $3x(x-3)^3 - x(x-3)^2$

27. $20x^4 - 10x + 25x^{-3} + 15x^{-5}$

28. $12x^2(2x-1)^{-2} - 8x(2x-1)^{-1}$

29. $3(4x-1)^{\frac{1}{2}} - 2x(4x-1)^{-\frac{1}{2}}$

30. $-12x^2(5-2x)^{-\frac{3}{2}} - 6x^3(5-2x)^{-\frac{1}{2}}$

Answers:

1. $\frac{1}{5}(x+1)$ 2. $\frac{1}{7}(2x+3)$ 3. $\frac{1}{3}(2x+1)$ 4. $\frac{1}{3}(x-6)$ 5. $\frac{1}{4}(4x-1)$ 6. $\frac{2}{7}(3x^2+2x+4)$

7. $\frac{1}{3}(6x-1)$ 8. $\frac{2}{3}(3x+1)$ 9. $\frac{2}{5}(10x-1)$ 10. $\frac{1}{3}(15x-2)$ 11. $\frac{1}{6}(3x+1)$ 12. $\frac{1}{4}(2x-3)$

13. $\frac{3}{7}(2x+7)$ 14. $\frac{1}{12}(4x+3)$ 15. $\frac{1}{24}(12x^2+8x-9)$

16. $x^4(2x^3-3x-1)$ 17. $x^{-4}(x^7-2x^6-3x^2-5)$ 18. $4x^{-6}(3x^7+x^6-2x^3+5)$

19. $\sqrt[4]{x}(x^2+x+1)$ 20. $x^{\frac{3}{4}}(x^3+x+1)$ 21. $x^{-4}(x^5+x+1)$

22. $\frac{1}{3}x^{-2}(2x^6+5x^3-7)$ 23. $5\sqrt{x}(x-2)$ 24. $\frac{1}{4}x^{-\frac{4}{3}}(8x^3+14x^2+1)$

25. $\frac{3}{10}x^{-\frac{1}{2}}(2x^4+3)$ 26. $x(x-3)^2(3x-10)$ 27. $5x^{-5}(4x^9-2x^6+5x^2+3)$

28. $4x(2x-1)^{-2}(2-x)$ 29. $(4x-1)^{-\frac{1}{2}}(10x-3)$ 30. $6x^2(5-2x)^{-\frac{3}{2}}(2x^2-5x-2)$