1. **Factor completely: $16x^4 - 24x^2$**
   GCF = $8x^2$
   Answer: $8x^2(2x^2 - 3)$

2. **Factor completely: $20x^3 - 15x$**
   GCF = $5x$
   Answer: $5x(4x^2 - 3)$

3. **Factor completely: $24x^3 + 32x$**
   GCF = $8x$
   Answer: $8x(3x^2 + 4)$

4. **Factor completely: $32x^2 - 24x$**
   GCF = $8x$
   Answer: $8x(4x - 3)$

5. **Factor completely: $12x^2 + 15x$**
   GCF = $3x$
   Answer: $3x(4x + 5)$

6. **Factor completely: $7x^3 - 21x^2$**
   GCF = $7x^2$
   Answer: $7x^2(x - 3)$

7. **Factor completely: $10x^2 + 6x$**
   GCF = $2x$
   Answer: $2x(5x + 3)$

8. **Factor completely: $2x + 8$**
   GCF = 2
   Answer: $2(x + 4)$

9. **Factor completely: $25x - 10$**
   GCF = 5
   Answer: $5(5x - 2)$

10. **Factor completely: $6x^3 - 9x^2$**
    GCF = $3x^2$
    Answer: $3x^2(2x - 3)$

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11. Factor completely: $28x^4 + 21x^2$

GCF = $7x^2$

Answer: $7x^2(4x^2 + 3)$

12. Factor completely: $12x^3 + 30x$

GCF = $6x$

Answer: $6x(2x^2 + 5)$

13. Factor completely: $30x^4 + 24x^3 - 18x^2$

GCF = $6x^2$

Answer: $6x^2(5x^2 + 4x - 3)$

14. Factor completely: $10x^3 + 25x^2 + 20x$

GCF = $5x$

Answer: $5x(2x^2 + 5x + 4)$

15. Factor completely: $15x^2 + 20x - 15$

GCF = 5

Answer: $5(3x^2 + 4x - 3)$

16. Factor completely: $7x^3 + 14x^2 + 28x$

GCF = $7x$

Answer: $7x(x^2 + 2x + 4)$

17. Factor completely: $10x^3 - 2x^2 + 2x$

GCF = $2x$

Answer: $2x(5x^2 - x + 1)$

18. Factor completely: $24x^3 + 6x^2 - 6x$

GCF = $6x$

Answer: $6x(4x^2 + x - 1)$

19. Factor completely: $20x^3 + 5x^2 + 15x$

GCF = $5x$

Answer: $5x(4x^2 + x + 3)$

20. Factor completely: $20x^3 - 12x^2 + 20x$

GCF = $4x$

Answer: $4x(5x^2 - 3x + 5)$

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21. Factor completely: $12x^4 + 18x^3 - 6x^2$ ★ challenge

GCF = $6x^2$

Answer: $6x^2(2x^2 + 3x - 1)$

22. Factor completely: $-8x^2 + 20x$ ★ challenge

GCF = $-4x$

Answer: $-4x(2x - 5)$

23. Factor completely: $15x^3 - 10x$ ★ challenge

GCF = $5x$

Answer: $5x(3x^2 - 2)$

24. Factor completely: $3x(x + 2) + 5(x + 2)$ ★ challenge

$(x + 2)$ is in both terms

Answer: $(x + 2)(3x + 5)$

25. A student factored $6x^2 + 9x$ as $3(2x^2 + 3x)$. Is that factored completely? Explain. ★ challenge

No — x is still in both terms inside

Answer: No. 3x is the full GCF: $3x(2x + 3)$.

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