

PRACTICE ✓ point

10

FACTOR

1. $x^2 + x$

2. $x^4 - 9$

3. $3x^4 + 12x^2$

4. $x^3 + 27$

5. $x^3 - 1000$

6. $x^2 + x - 12$

7. $x^4 - 8x^2 - 33$

8. $x^3 - 3x - 4x^2 + 12$

9. $x^4 - 25$

10. $x^3 + 343$

PRACTICE

✓ point

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FACTOR

1. $x^2 + x$
 2 terms both have x
 $x(x+1)$ GCF

2. $x^4 - 9$
 2 terms only 1 has an x
 Diff of 2 squares
 $(x^2+3)(x^2-3)$

3. $3x^4 + 12x^2$
 2 terms both have x
 $3x^2(x^2+4)$ GCF

4. $x^3 + 27$
 Sum of 2 cubes
 $\sqrt[3]{x^3} = x$ $\sqrt[3]{27} = 3$
 $(x+3)(x^2-3x+9)$
 $(a+b)(a^2-ab+b^2)$

5. $x^3 - 1000$
 $(x \cdot x \cdot x) - (10 \cdot 10 \cdot 10)$
 $a=x$ $b=10$
 $(a-b)(a^2+ab+b^2)$
 $(x-10)(x^2+10x+100)$

6. $x^2 + x - 12$
 $(x+4)(x-3)$ $\frac{-12}{-3 \times 4}$
 $\frac{4 \times -3}{-3 \times 4}$ ✓

7. $x^4 - 8x^2 - 33$
 $(x^2-11)(x^2+3)$

8. $x^3 - 3x - 4x^2 + 12$
 $x^3 - 4x^2 - 3x + 12$
 $(x^3 - 4x^2) + (-3x + 12)$
 $x^2(x-4) + (-3)(x-4)$
 $(x-4)(x^2-3)$

9. $x^4 - 25$
 $(x^2+5)(x^2-5)$

10. $x^3 + 343$
 Sum of 2 cubes
 $(x+7)(x^2-7x+49)$