Activity 1.2.3: Factoring the Difference of Two Squares

Total points = 34

Answers

1. $4x^2-49y^2$ ✓
   $=(2x)^2-(7y)^2$ ✓
   $=(2x-7y)(2x+7y)$ ✓
2. a^2-100 ✓
   $=(a)^2-(10)^2$ ✓
   $=(a-10)(a+10)$ ✓
3. y^8-16z^4 ✓
   $=(y^4)^2-(4z^2)^2$ ✓
   $=\left(y^4-4z^2\right)\left(y^4+4z^2\right)$ ✓
   $=\left(y^2-2z\right)\left(y^2+2z\right)\left(y^4+4z^2\right)$ ✓
4. y^4-1 ✓
   $=(y^2)^2-(1)^2$ ✓
   $=\left(y^2-1\right)\left(y^2+1\right)$ ✓
   $=(y-1)(y+1)\left(y^2+1\right)$ ✓
5. $25m^2-9$ ✓
   $=(5m)^2-(3)^2$ ✓
   $=(5m-3)(5m+3)$ ✓
6. $144x^6-100y^4$ ✓
   $=4(36x^6-25y^4)$ ✓
   $=4[(6x^3)^2-(5y^2)^2]$ ✓
   $=4\left(6x^3-5y^2\right)\left(6x^3+5y^2\right)$ ✓
7. a^2b^4-121 ✓
   $=(ab^2)^2-(11)^2$ ✓
   $=\left(ab^2-11\right)\left(ab^2+11\right)$ ✓
8. $x^6y^2-49z^8$ ✓
   $=(x^3y)^2-(7z^4)^2$ ✓
   $=\left(x^3y-7z^4\right)\left(x^3y+7z^4\right)$ ✓
9. x^2y^4-64 ✓
   $=(xy^2)^2-(8)^2$ ✓
   $=\left(xy^2-8\right)\left(xy^2+8\right)$ ✓
10. $36m^6-81$ ✓
    $=9(4m^6-9)$ ✓
    $=9[(2m^3)^2-(3)^2]$ ✓
    $=9\left(2m^3-3\right)\left(2m^3+3\right)$ ✓

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