Factored completely, the expression $16 \tan \theta - \tan^3 \theta$ is equivalent to

1) $\tan (4 - \tan \theta)^2$
2) $\tan \theta (\tan \theta - 4)^2$
3) $\tan (4 - \tan \theta)(4 + \tan \theta)$
4) $\tan (\tan \theta + 4)(\tan \theta - 4)$

Factor completely: $\tan^3 x - 9 \tan x$

Factor: $1 - \frac{1}{x^2}$

Factor the expression $12t^8 - 75t^4$ completely.

Factor: $x^4 - (x - 6)^2$

Factor: $x^8 - 1$

Factor: $x^8 - 16$

Factor: $a^4 + a^2 + 1$

Factor: $x^4 + 4x^2 + 16$
A.SSE.A.2: Factoring the Difference of Perfect Squares

Answer Section

1. ANS: 3
   \[16 \tan \theta - \tan^3 \theta = \tan \theta (16 - \tan^2 \theta) = \tan \theta (4 - \tan \theta)(4 + \tan \theta)\]
   REF: 081602a2

2. ANS:
   \[\tan x (\tan x + 3)(\tan x - 3)\]
   REF: 089916siii

3. ANS:
   \[\left(1 + \frac{1}{x}\right)\left(1 - \frac{1}{x}\right)\]
   REF: 039404al

4. ANS:
   \[12t^8 - 75t^4 = 3t^4(4t^4 - 25) = 3t^4(2t^2 + 5)(2t^2 - 5)\]
   REF: 061133a2

5. ANS:
   \[(x^2 - x + 6)(x + 3)(x - 2)\]
   REF: 039005al

6. ANS:
   \[(x^4 + 1)(x^2 + 1)(x + 1)(x - 1)\]
   REF: 019506al

7. ANS:
   \[(x^4 + 4)(x^2 + 2)(x^2 - 2)\]
   REF: 099403al

8. ANS:
   \[(a^2 + a + 1)(a^2 - a + 1)\]
   REF: 069707al

9. ANS:
   \[(x^2 + 2x + 4)(x^2 - 2x + 4)\]
   REF: 069404al