

A2.A.7: Factoring the Difference of Perfect Squares 1: Factor polynomial expressions completely using common factor extraction, difference of perfect squares, quadratic trinomials

1 Factor: $9x^2 - \frac{4}{9}$

9 Factor: $a^8 - b^8$

2 Factor: $9a^6 - 16b^8$

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

3 Factor: $4a^2b^4 - 25x^6y^4$

11 Factor: $(x + y)^4 - 1$

4 Factor: $a^4 - 16$

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

5 Factor: $x^4 - 81$

13 Factor: $4a^2b^2 - (a^2 + b^2 - c^2)^2$

6 Factor: $x^4 - y^4$

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

7 Factor: $16a^4 - b^8$

8 Factor: $x^8 - 16$

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Answer Section

1 ANS:

$$(3x + \frac{2}{3})(3x - \frac{2}{3})$$

REF: 089703al

2 ANS:

$$(3a^3 + 4b^4)(3a^3 - 4b^4)$$

REF: 119304al

3 ANS:

$$(2ab^2 + 5x^3y^2)(2ab^2 - 5x^3y^2)$$

REF: 019405al

4 ANS:

$$(a^2 + 4)(a + 2)(a - 2)$$

REF: 069404al

5 ANS:

$$(x^2 + 9)(x + 3)(x - 3)$$

REF: 039005al

6 ANS:

$$(x^2 + y^2)(x + y)(x - y)$$

REF: 010602al

7 ANS:

$$(4a^2 + b^4)(2a + b^2)(2a - b^2)$$

REF: 069707al

8 ANS:

$$(x^4 + 4)(x^2 + 2)(x + \sqrt{2})(x - \sqrt{2})$$

REF: 099403al

9 ANS:

$$(a^4 + b^4)(a^2 + b^2)(a + b)(a - b)$$

REF: 010502al

10 ANS:

$$12t^8 - 75t^4 = 3t^4(4t^4 - 25) = 3t^4(2t^2 + 5)(2t^2 - 5)$$

REF: 061133a2

11 ANS:

$$((x+y)^2 + 1)((x+y)^2 - 1)$$

REF: 039703al

12 ANS:

$$(x+3)(x-2)(x^2 - x + 6)$$

REF: 039005al

13 ANS:

$$(a+b+c)(a+b-c)(a-b+c)(-a+b+c)$$

REF: 039703al

14 ANS:

$$\tan x(\tan x + 3)(\tan x - 3)$$

REF: 089916siii