

# Mixed Factoring Worksheet

Factor each completely if possible.

①  $9a^2 + 3a - 12$

②  $10a^2 + 35a - 75$

③  $48x^2 - 27$

④  $9x^2 - 25$

⑤  $8x^3 - 64$

⑥  $18x^3 - 2x^2 + 27x - 3$

⑦  $5x^2 - 32x - 21$

⑧  $3x^3 + 24$

⑨  $x^3 + x^2 - x - 1$

⑩  $16d^8 - 8d^4 + 1$

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## Answers

①  $9a^2 + 3a - 12$

$$3(3a + 4)(a - 1)$$

②  $10a^2 + 35a - 75$

$$5(2a - 3)(a + 5)$$

③  $48x^2 - 27$

$$3(4x + 3)(4x - 3)$$

④  $9x^2 - 25$

$$(3x + 5)(3x - 5)$$

⑤  $8x^3 - 64$

$$8(x - 2)(x^2 + 2x + 4)$$

⑥  $18x^3 - 2x^2 + 27x - 3$

$$(2x^2 + 3)(9x - 1)$$

⑦  $5x^2 - 32x - 21$

$$(5x + 3)(x - 7)$$

⑧  $3x^3 + 24$

$$3(x + 2)(x^2 - 2x + 4)$$

⑨  $x^3 + x^2 - x - 1$

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

⑩  $16d^8 - 8d^4 + 1$

$$(2d^2 + 1)^2(2d^2 - 1)^2$$