

Alg 2 2.5 Homework

Question 1.

Factor the polynomial, or identify it as irreducible. If the polynomial is irreducible, enter NA.

$$x^3 + 2x^2 - 3x$$

The polynomial factors to .

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Question 2.

Factor the polynomial, or identify it as irreducible. If the polynomial is irreducible, enter NA.

$x^3 - 216$

The polynomial factors to .

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Question 3.

Factor the polynomial, or identify it as irreducible. If the polynomial is irreducible, enter NA.

$2x^3 + 8x$

The polynomial factors to **.**

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Question 4.

Factor the polynomial, or identify it as irreducible. If the polynomial is irreducible, enter NA.

$$2x^4 + 5x^3 + 3x^2$$

The polynomial factors to .

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Question 5.

Factor the polynomial by grouping.

$$x^3 + 5x^2 + 7x + 35$$

The polynomial factors to .

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Question 6.

Drag and drop each of the polynomial expressions into the correct category to show which, if any, special factoring pattern it follows.

$$216x^3 + 125$$

$$7x^3 + 6$$

$$27x^3 - x^2 + 1$$

$$9x^2 + 81$$

$$x^2 - 9$$

Difference of two squares	Sum of two cubes	Difference of two cubes	None



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Question 7.

Jim was trying to factor a polynomial function and produced the following results:

$7x^3 + x^2 + 7x + 1$ **Write out the polynomial.**

$7x^2(x + 1) + 7(x + 1)$ **Group by common factor.**

$7(x^2 + 1)(x + 1)$ **Regroup.**

Complete the explanation of Jim's error.

Jim misgrouped the polynomial function. He should have grouped the function like this:

$7x^3 + x^2 + 7x + 1$ **Write out the polynomial.**

 Group by common factor.

 Regroup.
