

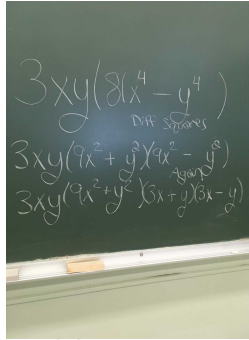
Sums and Differences of Cubes Class Work

Objective: You will be able to rewrite polynomial expressions in factored form, and use the factored form to solve equations.

EXTENSION ON SUMS AND DIFFERENCES OF CUBES:

Task B:

1. The expression $243x^5y - 3xy^5$ has the following three factors: $3xy$, $3x - y$, and $9x^2 + y^2$.



What is the fourth factor?

$3x + y$

2. Select all of the factors of $16x^8 + 2x^2y^3$

$2x^2$

$2x^2 + y$

$2x^3 + y$

$4x^4 + 2x^2y + y^2$

$4x^4 - 2x^2y + y^2$

$2x^2(8x^6 + y^3)$
 $2x^2(2x^2 + y)(4x^4 - 2x^2y + y^2)$
 $(x^2)^3 = x^6$

3. Two of the three factors of $32x^8y + 108x^2y^4$ are $4x^2y$ and $2x^2 + 3y$. What is the third factor?

$4x^2y(8x^6 + 27y^3)$
 $4x^2y(2x^2 + 3y)(4x^4 - 6x^2y + 9y^2)$

Quick Quiz Quick Review

1. Solve $8x^3 = 125$

2. Factor completely

$$686x^{23} - 2x^2$$

$$\begin{aligned} & 8x^3 = 125 \\ \textcircled{1} & 8x^3 - 125 = 0 \\ & (2x - 5)(4x^2 + 10x + 25) \end{aligned}$$

$$x = \frac{5}{2} \quad x = \frac{-10 \pm \sqrt{-300}}{8}$$

$$x = \frac{-10 \pm 10i\sqrt{3}}{8}$$

$$x = \frac{-5 \pm 5i\sqrt{3}}{4}$$

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Quick Quiz Quick Review

1. Solve $8x^3 = 125$

2. Factor completely

$$686x^{23} - 2x^2$$

$$2x^2(343x^{21} - 1)$$

$$2x^2(7x^7 - 1)(49x^{14} + 7x^7 + 1)$$

$$x = \frac{-3 \pm \sqrt{5}}{4}$$

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Quick Quiz

① Solve. $27x^3 - 8 = 0$

① solve
 $27x^3 - 8 = 0$

2. Factor completely

$192x^{16} - 3x^4$