How do we add/subtract irrational numbers?

Do Now

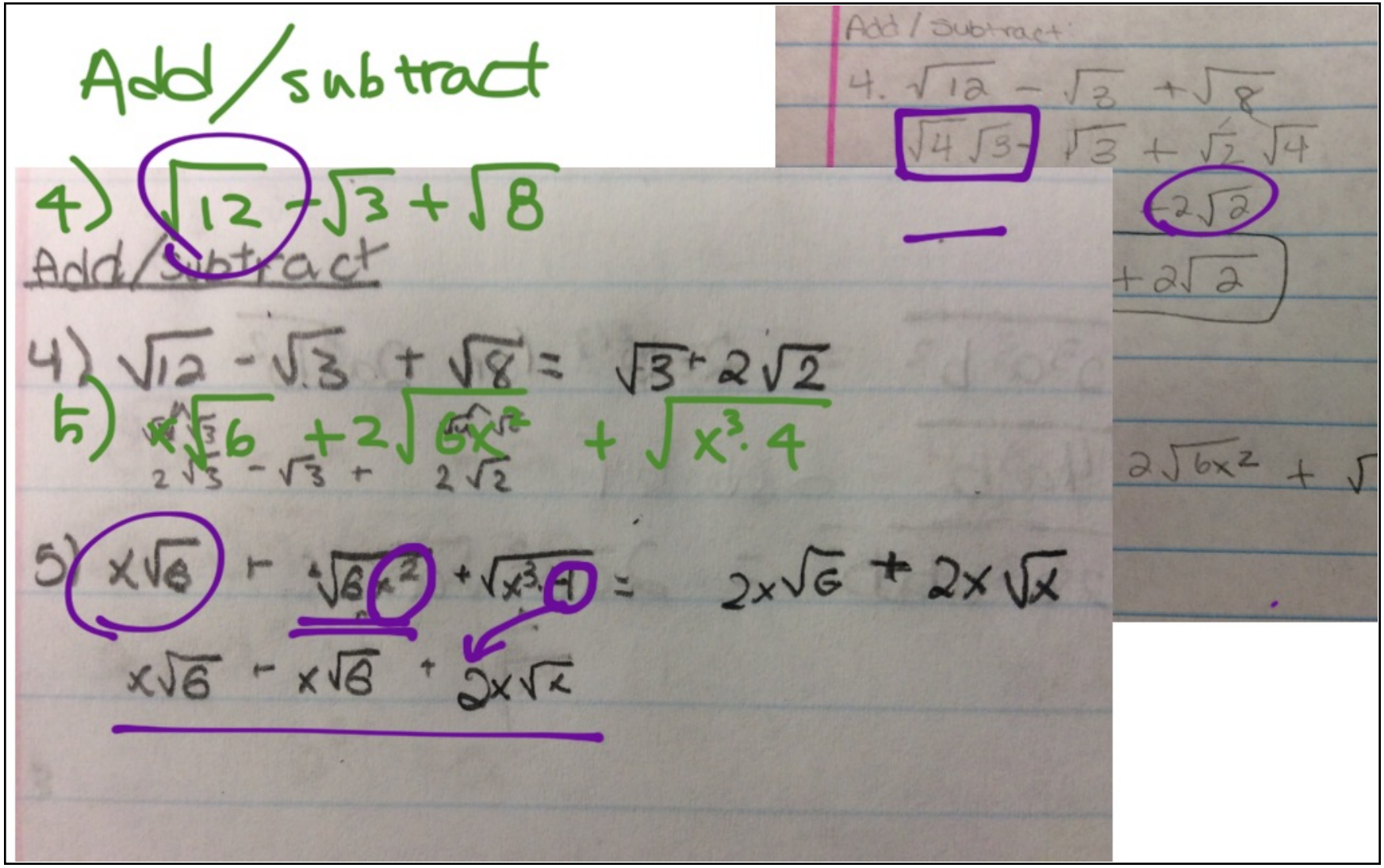
1) $2x + 3x = 5x$

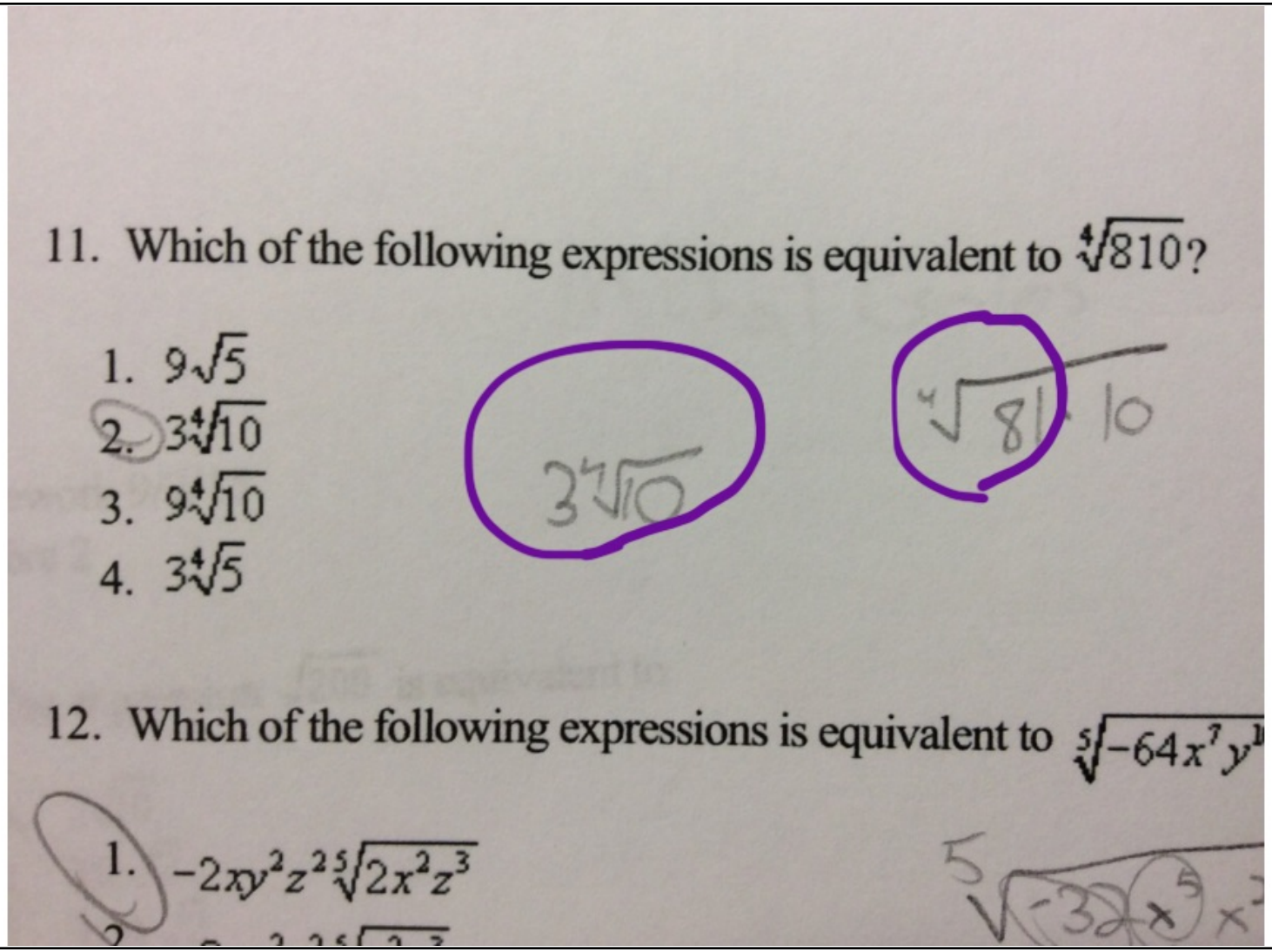
2) $2\sqrt{5} + 3\sqrt{5} = 5\sqrt{5}$

3) $\sqrt{20} + \sqrt{45} = 5\sqrt{5}$

$\sqrt{4}\sqrt{5} \quad \sqrt{9}\sqrt{5}$

$= 2\sqrt{5} + 3\sqrt{5}$


Add / subtract
4) √12 − √3 + √8
Add/Subtract
4) √12 − √3 + √8 = √3 + 2√2
5) x√6 + 2√6x² + √x³·4
2√3 − √3 +
2√2
+ √x³·4
5) x√6 + √6x² + √x³·4 = 2x√6 + 2x√x
x√6 + x√6 + 2x√x
Add / Subtract:
4. √12 − √3 + √8
√4 √3 + √3 + √2 √4
2√2
+2√2
2√6x² + √



11. Which of the following expressions is equivalent to $\sqrt[4]{810}$?

1. $9\sqrt{5}$
2. $3\sqrt[4]{10}$
3. $9\sqrt[4]{10}$
4. $3\sqrt[4]{5}$

12. Which of the following expressions is equivalent to $\sqrt[5]{-64x^7y^{1}}$

1. $-2xy^2z^2\sqrt[5]{2x^2z^3}$

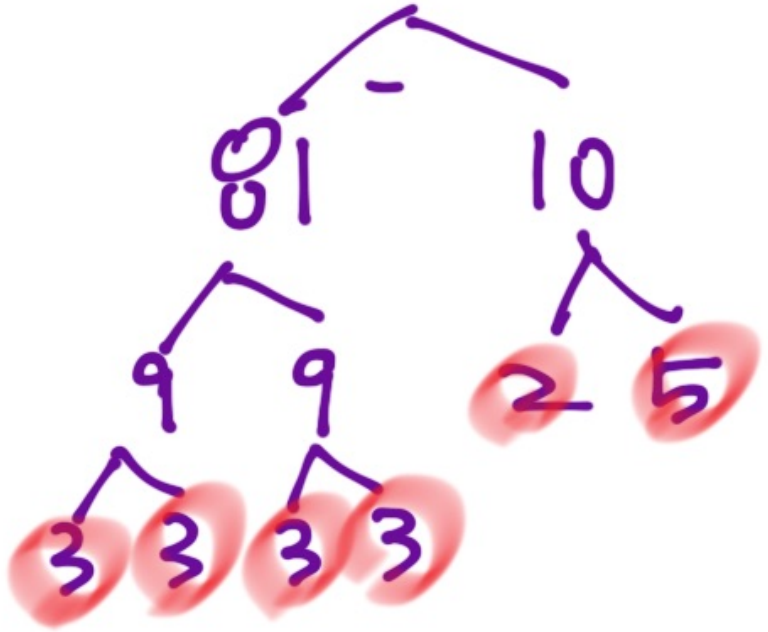
$$\sqrt[4]{810}$$

$$= \sqrt[4]{3^4 \cdot 2 \cdot 5}$$

$$= \sqrt[4]{3^4}\sqrt[4]{2 \cdot 5}$$

$$= 3\sqrt[4]{10}$$

$$3^4 \cdot 2 \cdot 5 = 810$$



6. Simplify the radical expression: $\frac{1}{2}\sqrt{80xz^3}$

$= \frac{1}{2}\sqrt{2^2 2^2 5xz^2 \cdot z}$

$80 = 2^2 \cdot 2^2 \cdot 5$

$= \frac{1}{2} \cdot 4z\sqrt{5xz}$

$= 2z\sqrt{5xz}$

1. $4z\sqrt{5xz}$
2. $8z\sqrt{5xz}$
3. $2z\sqrt{5xz}$
4. $2xz^2\sqrt{5x}$

12. Which of the following expressions is equivalent to $\sqrt[5]{-64x^7y^{10}z^{13}}$?

1. $-2xy^2z^2\sqrt[5]{2x^2z^3}$
2. $-8xy^2z^2\sqrt[5]{x^2z^3}$
3. $-2xy^2z^3\sqrt[5]{4x^3y^2z}$
4. $2xy^2z^2\sqrt[5]{-4x^2z^3}$

64 → 4 16 → 2 2 4 4 → 2 2 2 2

$\sqrt[5]{-2^5 \cdot 2 x^5 x^2 y^5 y^5 z^5 z^5 z^3}$

$= -2xy^2z^2\sqrt[5]{2x^2z^3}$