To pass this test you can have at most one error.

1. Simplify the expression $(-27)^{5/3}$.

2. Simplify the expression $(81)^{3/4} + (25)^{1/2}$.

3. For the function $f(x) = \sqrt{3x + 21}$, find the value at $x = 5$ and $x = -4$.

4. What is the domain for the function $f(x) = \sqrt{3x + 21}$?

5. Simplify the expression $\sqrt[4]{256x^8 y^{16}}$.

6. Simplify the expression $\sqrt[3]{128} - 4\sqrt[3]{16}$ so that is is one term.

7. Rationalize the numerator in the expression $\dfrac{\sqrt{11x} - 2}{\sqrt{11x} + \sqrt{7}}$ and simplify.

8. Simplify the expression $(5\sqrt{6} - 3\sqrt{2})(\sqrt{6} + 2\sqrt{2})$ as much as possible.

9. Evaluate $\sqrt[3]{-8}$.

10. Evaluate $\sqrt[6]{-64}$.

11. Rationalize the denominator in the expression $\dfrac{\sqrt{3x} - 2\sqrt{y}}{\sqrt{3x} + \sqrt{y}}$ and simplify.

12. Simplify $\sqrt{75} + 2\sqrt{20} - \sqrt{45}$.

Solutions

1. -243

2. 32

3. $f(5) = 6$ and $f(-4) = 3$

4. $x \geq -7$

5. $4x^2 y^4$

6. $-4\sqrt[3]{2}$

7. $\dfrac{11x - 4}{11x + \sqrt{7}\sqrt{11x} + 2\sqrt{11x} + 2\sqrt{7}}$

8. $18 + 14\sqrt{3}$

9. -2

10. the expression is not a real number

11. $\dfrac{3x - 3\sqrt{3xy} + 2y}{3x - y}$

12. $5\sqrt{3} + \sqrt{5}$