Answers: Introduction to rearranging equations

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Summary

Answers to questions relating to the guide on introduction to rearranging equations.

These are the answers to Questions: Introduction to rearranging equations.

Please attempt the questions before reading these answers!

Q1

1.1. $a = x - 2b$

1.2. $b = \dfrac{x - a}{2}$

1.3. $z = -\dfrac{x}{4} + \dfrac{y}{2} + 1$

1.4. $x = \dfrac{3y}{5} - \dfrac{8z}{5} - \dfrac{2}{5}$

1.5. $y = \dfrac{5x}{3} + \dfrac{8z}{3} + \dfrac{2}{3}$

1.6. $z = -\dfrac{5x}{8} + \dfrac{3y}{8} - \dfrac{1}{4}$

1.7. $x = \pm\sqrt{4 - y^2}$

1.8. $x = \pm\sqrt{4a - \dfrac{y^2}{4}}$

1.9. $y = \pm\sqrt{16a - 4x^2}$

1.10. $x = \pm\sqrt{(y+1)^2 + a^2}$

1.11. $a = \sqrt[3]{x^3 - (y+1)^3}$

1.12. $x = \sqrt[3]{(y+1)^3 - a^3}$

1.13. $d = \dfrac{a^3 - x^4y^2}{2bc}$

1.14. $a = \sqrt[3]{x^4y^2 - 2bcd}$

1.15. $x = \pm\sqrt[4]{\dfrac{a^3 + 2bcd}{y^2}}$

1.16. $x = \dfrac{1}{ly^2 - 45}$

Q2

$$a = \frac{5x^3y^3}{4bc^2} + \frac{6z}{4bc^2w^4}$$

$$b = \frac{5x^3y^3}{4ac^2} + \frac{6z}{4ac^2w^4}$$

$$c = \pm\sqrt{\frac{5x^3y^3}{4ab} + \frac{6z}{4abw^4}}$$

$$y = \sqrt[3]{\frac{4abc^2}{5x^3} - \frac{6z}{5w^4x^3}}$$

$$z = \frac{4abc^2w^4 - 5w^4x^3y^3}{6}$$

$$w = \sqrt[4]{\frac{6z}{4abc^2 - 5x^3y^3}}$$

Version history and licensing

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- v1.1: edited 05/24 by tdhc.