**Identify the appropriate grade level**

**Grades 5 – Algebra 1**

|  |  |  |
| --- | --- | --- |
| $$\frac{x - 7}{-3}= 4$$ | $$-\frac{2}{3}x = x + 25$$ | $$\frac{1}{5}x = -3$$ |
| $$9x^{2}-11=6x$$ | $$2x + 7 - 5x = 27$$ |  $4x+8=-3(x-6)$ |
| $$\frac{x - 3}{4}+2= 2x + 1$$ | $$-6=y-3$$ | $$10= \frac{3}{4}x - 2$$ |
| Use an equation to represent this situation:“A full box of cookies and 4 extra equal 24 cookies” | $$2x^{2}-x-1=0$$ | $$ \frac{2}{3}x= 8$$ |
| $$2x+3=2x+7$$ | $$-2x = 5$$ |  $\frac{\left(2.4x + 6\right)}{-2}$ $=8.2$ |

**Algebra Equations**

**Grades 5 – Algebra 1 Key**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SOL 5.19** | **SOL 6.13** | **SOL 7.12** | **SOL 8.17** | **ALGEBRA 1** |
| Use an expression with a variable to represent a given verbal expression involving one operation*“A full box of cookies and 4 extra equal 24 cookies”* $b + 4 = 24$ | $$-2x = 5$$$$-6= y - 3 $$$$\frac{1}{5}x = -3$$* **Solve 1-step linear equations in one variable with integer coefficients and unit fractions**
* **Practical problems are included**
* **Modeling**
 | $$\frac{x - 7}{-3}= 4$$$$ \frac{2}{3}x= 8$$$$10= \frac{3}{4}x - 2$$**NOTE*****Simplifying expressions with rational numbers first introduced in SOL 7.11. Students will need lots of practice prior to simplifying equations with rational numbers.**** **Solve 2-step linear equations in one variable**
* **Coefficients and numeric terms will be rational numbers**
* **Practical problems are included**
* **Modeling**
 | $$2x + 7 - 5x = 27$$$$-\frac{2}{3}x = x + 25$$$$4x+8=-3(x-6)$$$\frac{\left(2.4x + 6\right)}{-2}$ $=8.2$* **Variables on both sides**
* **Multi-step linear equations in one variable (up to 4 steps)**
* **Coefficients and numeric terms will be rational**
* **Combining like terms**

***Prior Knowledge Note: Distributive property is included in grade 7 for evaluating algebraic expressions for given replacement values of the variable (SOL 7.11)*** | $$2x^{2}-x-1=0$$$$9x^{2}-11=6x$$$$\frac{x - 3}{4}+2= 2x + 1$$$$2x+3=2x+7$$* **Multi-step linear equations in one variable**
* **Quadratic equations in one variable**
* **Determine whether a linear equation in one variable has one, an infinite number, or no solutions**
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