Review - Part 2

Algebraic Expressions

Solving Equations

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A variable is a placeholder for some value.
To evaluate an expression with variables, substitute a given number in place of the variable.

if x = 2 and y = -3 then

$2x^2 - y = 2(2)^2 - (-3)$

$= 2(4) + 3$

$= 8 + 3$

$= 11$

$-(-3)$

$--3$ c!

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To simplify an expression:
1. Expand any brackets
2. Collect like terms

Like Terms have the same variables, and matching variables have the same exponent.

Use the distributive property to multiply a single term into a bracket.

$2(2x^2 + 3) - 1(-x^2 - 2x) - 5$

$= 4x^2 + 6 + 1x^2 + 2x - 5$

$= 5x^2 + 2x + 1$

highest degree → lowest degree

xy order or degree 2

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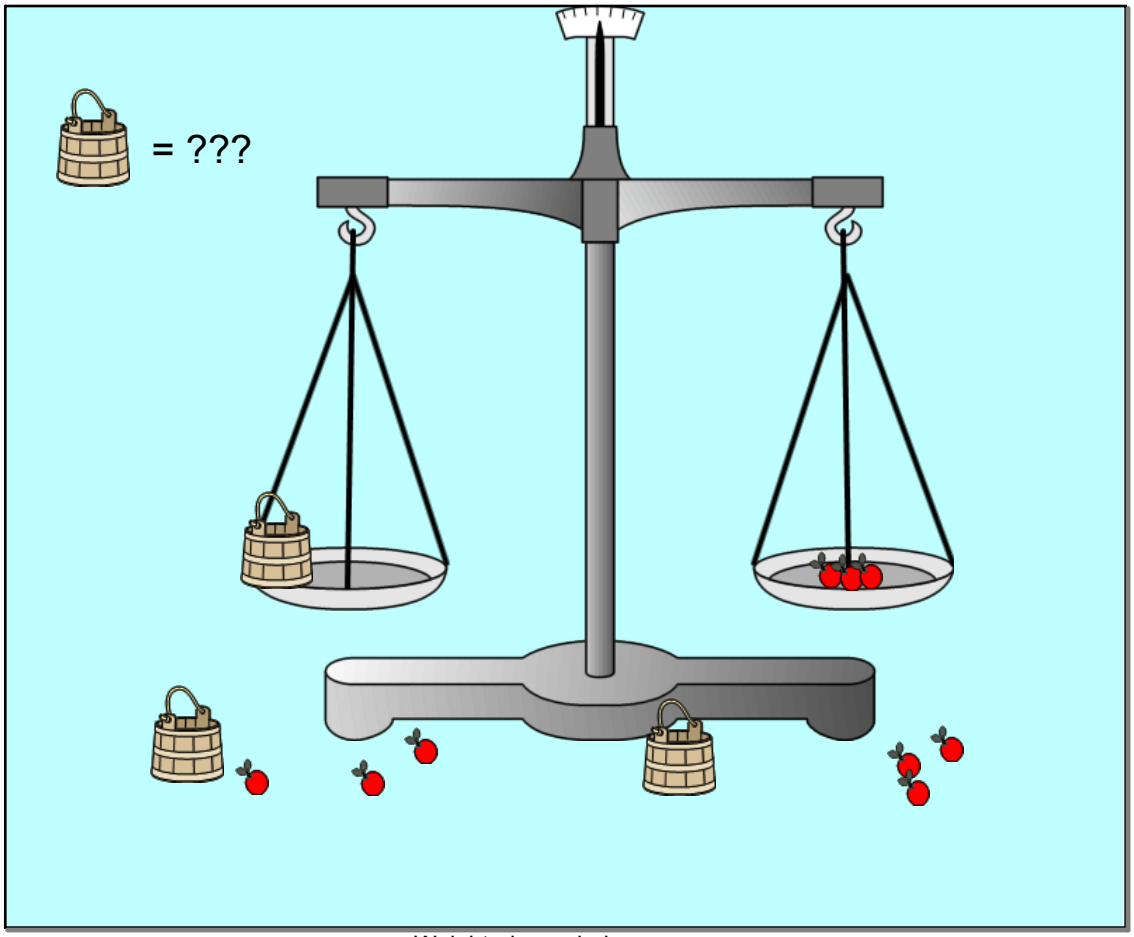

Weight - beam balance

An equation has an expression on each side of an equal sign.

To solve an equation, find the value that makes the left side (LS) equal to the right side (RS). This value is called the solution or root of the equation.

1. Expand (and simplify) each side
2. Isolate terms with variables on one side, constants on the other side.
3. Simplify like terms.
4. Solve for the unknown.

(a) $2x + 3 = x + 6$

$-3 \quad -3$

$2x = x + 3$

$-x \quad -x$

$\boxed{x = 3}$

(b) $y + 3(y - 2) = 2(3y + 4)$

$y + 3y - 6 = 6y + 8$

$4y - 6 = 6y + 8$

$-6y + 6 \quad -6y + 6$

$\frac{-2y}{-2} = \frac{14}{-2}$

$\boxed{y = -7}$

p1,4,3,2

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Assigned Work:

A-8: p.471 # 1abf, 2bc, 3, 4ac, 5cd, 6bc
A-9: p.472 # 1def, 3

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p. 1 1, 4, 3, 2

p. 4 #4.

$5(4y-6) = 16-3y$

$20y - 30 = 16 - 3y$

$+3y \qquad +3y$

$23y - 30 = 16$

$+30 \qquad +30$

$\frac{23y}{23} = \frac{46}{23}$

$y = 2$

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p. 3 #1, 2, 8

1. $\frac{(12-k)}{-22} = 15$

Order Ops ank

subtract ↓ divide add ↑ multiply

$(-22) \times \frac{12-k}{-22} = 15 \times (-22)$

$12 - k = -330$

$-12 \qquad -12$

$\frac{-1k}{-1} = \frac{-342}{-1}$

$k = 342$

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p. 3 # 2

$$\frac{3}{4}y + 15 = 22$$

$$-15 \quad -15$$

$$\frac{4}{3} \times \frac{3}{4}y = 7 \times \frac{4}{3}$$

$$y = \frac{28}{3}$$

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p. 3 #8

$$15 + \frac{2}{3}x = 13$$

$$\frac{2}{3}x = 13 - 15$$

$$\frac{3}{2} \times \frac{2}{3}x = -2 \times \frac{3}{2}$$

$$x = -3$$

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p. 2 # 4, 9

$(4+\frac{5}{7})a$

4. $-17\frac{1}{7} = 4\frac{5}{7}a$

$\frac{\cancel{7}^{1}}{33} \times \frac{-120}{\cancel{7}_{1}} = \frac{33}{7}a \times \frac{7}{33}$

$\frac{-\cancel{120}^{40}}{\cancel{33}_{11}} = a$

$a = \frac{-40}{11}$

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