

June 4, 2015
Quiz #1

#1) $\frac{2}{5} + \frac{4}{7} - \frac{1}{6}$

$$\frac{14 + 20}{35} - \frac{1}{6}$$

$$\frac{34}{35} - \frac{1}{6}$$

$$\frac{204 - 35}{210} = \frac{169}{210}$$

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#2)

$$\frac{\frac{2}{x}}{\frac{4}{x^2}} = \frac{2}{x} \cdot \frac{x^2}{4} = \frac{x}{2}$$

$$= \frac{2x^2}{4x} = \frac{1x}{2} = \frac{x}{2}$$

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#3)

$$3(4x + 8 - \frac{6x}{3} - 5x)$$

$$12x + 24 = 6x - 15x$$

$$12x + 24 = -9x$$

$$\frac{21x}{21} = \frac{-24}{21}$$

$$x = -\frac{8}{7}$$

Ok

$$4(-\frac{8}{7}) + 8 = \frac{6(-\frac{8}{7})}{3} - 5(-\frac{8}{7})$$

$$-\frac{32}{7} + \frac{56}{7} = \frac{-48}{7} + \frac{40}{7}$$

$$\frac{-32 + 56}{7} = \frac{-48 + 40}{7}$$

$$\frac{24}{7} = \frac{-16 + 40}{7}$$

$$= \frac{-16 + 40}{7}$$

$$\frac{24}{7} = \frac{24}{7}$$

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#4)

$$(7y^2 - 11y + 2) - (2y^2 - 6y) + (4y - 18)$$

$$7y^2 - 11y + 2 - 2y^2 + 6y + 4y - 18$$

$$5y^2 - y - 16$$

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GCD: 15

$$15 \left(\frac{6x - 2}{3} + 3 = \frac{7x}{3} + 8 \right)$$

$$3(6x - 2) + 45 = 5(7x) + 120$$

$$18x - 6 + 45 = 35x + 120$$

$$18x + 39 = 35x + 120$$

$$-18x - 120 = -18x - 120$$

$$-81 = 17x$$

$$-\frac{81}{17} = x$$

Do the check!

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Difference of Two Squares

$$a^2 - b^2 = (a + b)(a - b)$$

* See #17

Sum & Difference of Two Cubes

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$$

#18) $x^3 + 64 = (x + 4)(x^2 - 4x + 16)$

$a = x$
 $b = 4$

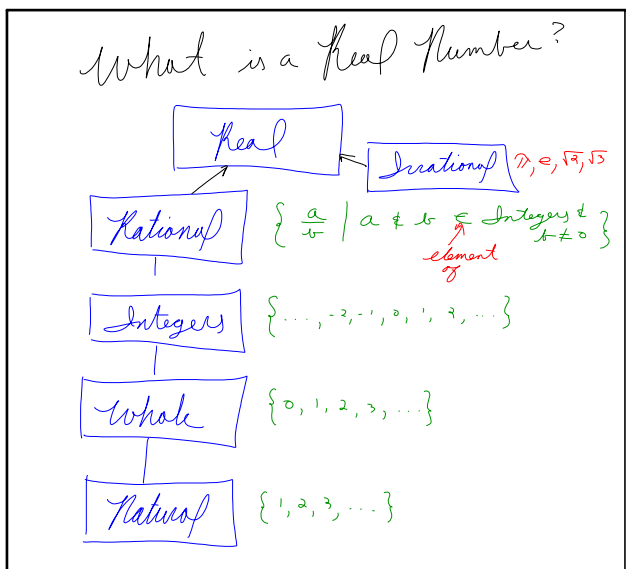
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#19) $3x^2 + 15x + 18 = 0$ *← 2 solutions*
 \neq always
 set equal to zero!
 $3(x^2 + 5x + 6) = 0$
 $3(x+3)(x+2) = 0$
 $(3x+9)(x+2) = 0$
 ① $3x+9 = 0$
 $x = -3$
 ② $x+2 = 0$
 $x = -2$
Chk
 $x = -3$
 $3(-3)^2 + 15(-3) + 18 = 0$
 $3(9) - 45 + 18 = 0$
 $27 - 45 + 18 = 0$
 $-18 + 18 = 0$
 $0 = 0$
 $x = -2$
 $3(-2)^2 + 15(-2) + 18 = 0$
 $3(4) - 30 + 18 = 0$
 $12 - 30 + 18 = 0$
 $-18 + 18 = 0$
 $0 = 0$

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#22) $f(x) = \frac{1-4x}{x^2 - 2x - 15} = 0$
Rational Function
 $\frac{a}{b}$ is undefined
 $x^2 - 2x - 15 = 0$
 $(x-5)(x+3) = 0$
 ① $x = 5$
 ② $x = -3$
why
 $x = 5$
 $f(5) = \frac{1-4(5)}{(5)^2 - 2(5) - 15} = \frac{1-20}{25-10-15} = \frac{-19}{0} = -\frac{19}{0}$
 Domain: $\{x \mid x \text{ is a real number} \neq x = 5 \neq -3\}$
such that

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Quiz #2 - Tuesday
 Remaining problems from Prep handout
 * Turn in SSC #1 for Monday

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#2) $(-1) \cdot b + (-1) \cdot a$
 ans. $(-1)[b+a]$
Distributive Property
 $a(b+c) = ab + ac$

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