JUNE 4

REVIEW: FACTOR BY GROUPING

$(6x^3 - 14x^2) + (-15x + 35)$

$2x^2(3x - 7) - 5(3x - 7) = (2x^2 - 5)(3x - 7)$

Zero-Product Property
If $ab = 0$, then $a = 0$ or $b = 0$.

To solve an equation using the zero-product property :

- set equation equal to 0
- divide both sides by common integer factor
- factor completely
- set factors equal to 0
- solve and check

highest exponent of the polynomial = # of solutions

1 $\frac{3x^2 - 3x - 126}{3} = \frac{0}{3}$

$x^2 - x - 42 = 0$

$(x+6)(x-7) = 0$

$x+6=0$ OR $x-7=0$

$x = -6, 7$

2 $5x^2 + 9x = 2$

$5x^2+9x-2=0$

$(5x-1)(x+2)=0$

$5x-1=0$ or

$\frac{1}{5}, -2$ $\frac{5x}{5}=\frac{1}{5}$ $x+2=0$

3 $12x^3 - 17x^2 + 6x = 0$

$x(12x^2 - 17x + 6) = 0$

$x(4x-3)(3x-2)=0$

$x=0$ or $4x-3=0$ or $3x-2=0$

$4x=3$

$x=\frac{3}{4}$ $x=2/3$

4 $25x^2 + 40x = -16$

$25x^2 + 40x + 16 = 0$

$(5x+4)^2 = 0$

or

$(5x+4)(5x+4) = 0$

$5x + 4 = 0$

$5x = -4$

$x = -4/5$

5 $98x^3 - 18x = 0$

$2x(49x^2 - 9) = 0$

$2x(7x+3)(7x-3) = 0$

$2x = 0$

$x = 0, \; x = \frac{-3}{7}, \; x = \frac{3}{7}$

$7x + 3 = 0$

$7x = -3$

$x = \frac{-3}{7}$