Geometry / Algebra 1 4-12-13 Class Notes

① To increase the mean of a 8 numbers by 5, how much would the sum of the 8 numbers need to increase?

40

Since $\frac{N}{8}$ = mean

$$\frac{N+40}{8} = \frac{N}{8} + 5 = \text{mean} + 5$$

Elementary Algebra
Practice ACT Problems

(2) $\frac{1}{7}N + 3 = -\frac{1}{5}(1N - 20)$ $N = ?$

$\frac{1}{7}N + 3 = -\frac{1}{5}N + 4$

$-3 \qquad +\frac{1}{5}N - 3$

$\frac{5}{35} + \frac{7}{35}$

$\frac{1}{5}N = 1$

$\frac{35}{12} \cdot \frac{12}{35}N = 1$

$N = \frac{35}{12}$

PST

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

$(4x^2+20x+25)(-3x+7)$

$-12x^3-60x^2-75x$

$+28x^2+140x+175$

$-12x^3-32x^2+65x+175$

PATTERN

PST

$(2x+5)(2x+5)$

$4x^2+10x+10x+25$

$4x^2+20x+25$

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

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

$(x+6)^2 = x^2 + 12x + 36$

$(x + 6)^2$

Perfect Square Trinomial Patterns

$(2x+5)^2 = 4x^2 + 20x + 25$

$(3x-2)^2 = 9x^2 - 12x + 4$

$(7x+1)^2 = 49x^2 + 14x + 1$

$(4x-3)^2 = 16x^2 - 24x + 9$

$(8x+6)^2 = 64x^2 + 96x + 36$

DOS

$16x^2 - 49 = (4x-7)(4x+7)$

(7) $$\frac{\frac{3}{4} - \frac{1}{3}}{\frac{3}{4} + \frac{1}{3}}$$

$$\frac{\frac{9}{12} - \frac{4}{12}}{\frac{9}{12} + \frac{4}{12}} = \frac{\frac{5}{12}}{\frac{13}{12}} \cdot \frac{12}{13}$$

$$= \boxed{\frac{5}{13}}$$

(9) $8 - 5x = -47$ $\quad 2x = ?$

$-8 \qquad -8$

$\frac{-5x}{-5} = \frac{-55}{-5}$

$x = 11$

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(11) $(-4x^6y^7)(-2x^1y^3)$

$8x^7y^{10}$

(12) $(-3, 7), (2, 5)$

$\frac{5-7}{2+3} = \frac{-2}{5} = m$

(21) $\dfrac{6^2}{3x(x-5)} - \dfrac{(x-6)}{2x}$

$\dfrac{2}{x(x-5)} - \dfrac{(x-6)}{2x}$

$\dfrac{4x}{(2x)(x)(x-5)} - \dfrac{(x-6)(x)(x-5)}{(2x)(x)(x-5)}$

$\dfrac{4x - [(x-6)(x)(x-5)]}{(2x)(x)(x-5)}$

$\dfrac{4 - [x^2 - 11x + 30]}{2x(x-5)}$

$\dfrac{4 - x^2 + 11x - 30}{2x(x-5)}$

$$\boxed{\dfrac{-26 - x^2 + 11x}{2x(x-5)}}$$