Warm-Up

Take your notes out

Ask questions

$200x^2 - 50$

$50(2x-1)(2x-1)$

$3x^2 + 81$

$3(x^2 - 27)$

25. $8x^3 - 64$

$a = \sqrt[3]{8x^3}$ $b = \sqrt[3]{64}$

$a = 2x$ $b = 4$

$(2x-4)(4x^2+8x+16)$

26. $x^2 + 3x - 18$

$(x-3)(x+6)$

$x^2 + 8x + 16$

$(x+4)(x+4)$

$3x^2 - 11x - 20$

28. $(18x^3 + 30x^2) + (3x + 5)$

$6x^2(3x+5) + 1(3x+5)$

$(6x^2+1)(3x+5)$

29. $3x^3 + 24$

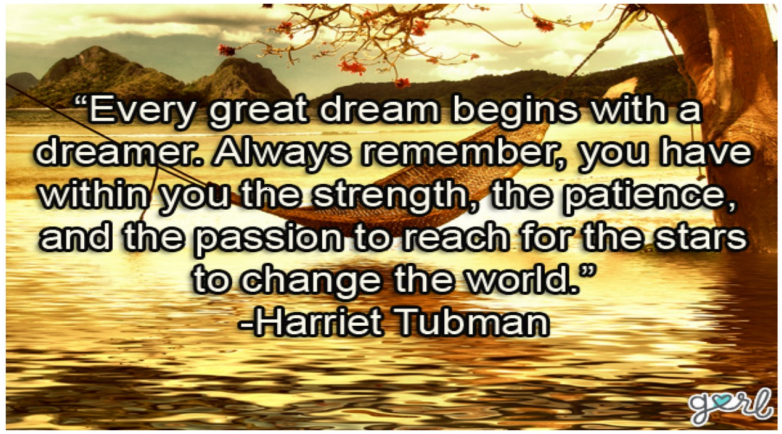
ACT of the day!!

What is the difference between the mean and the median of the set {3, 8, 10, 15}

A) 0
B) 1
C) 4
D) 9
E) 12

mean = 9
median = 9

Factoring Test



Unit 1 ~ Polynomials

Objective: A.REI.2

Day 11: Solving Rational Equations

$$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$$

$$1 + 1 = 2$$

Example 1:

Solve for x.
Check for extraneous solutions- ~~solution~~ solution that does not satisfy the equation

$$\frac{x}{x-3} + \frac{x}{x+3} = \frac{2}{x^2-9}$$

Steps

$$\frac{x+3}{x+3}\frac{x}{x-3} + \frac{x}{x+3}\cdot\frac{x-3}{x-3} = \frac{2}{(x+3)(x-3)}$$

$$\frac{x^2+3x}{(x+3)(x-3)} + \frac{x^2-3x}{(x+3)(x-3)} = \frac{2}{(x+3)(x-3)}$$

$$\frac{2x^2-x^2+x^2}{(x+3)(x-3)} = \frac{2}{(x+3)(x-3)}$$

$$2x^2 = 2$$

$$2x^2 - 2 = 0$$

$$2(x^2-1) = 0$$

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

$$x = 1$$

Observations

1. factored denom
2. multiply both sides by L.C.D. or Lon
3. Combine like term
4. set num equal to each other
5. Solve for x

Example 2:

Solve for x.
Check for extraneous solutions.

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

$$\frac{x-1}{(x+2)(x+1)} + \frac{2x}{x+2}\cdot\frac{x+1}{x+1} = \frac{x-1}{x+1}\cdot\frac{x+2}{x+2}$$

$$\frac{1}{(x+2)(x+1)} + \frac{2x^2+2x}{(x+2)(x+1)} = \frac{x^2+x-2}{(x+1)(x+2)}$$

$$\frac{2x^2+3x-1}{(x+2)(x+1)} = \frac{x^2+x-2}{(x+1)(x+2)}$$

$$2x^2+3x-1 = x^2+x-2$$

$$-x^2 \quad -x \quad +2 \quad -x^2-x+2$$

$$x^2+2x+1 = 0$$

$$(x+1)(x+1) = 0$$

$$x+1=0 \quad x+1=0$$

$$x = -1, -1$$

extr solution

NO solution

Example 3:

Solve for x.
Check for extraneous solutions.

$$\frac{x-3}{x+1} = \frac{2x-3}{2x+1}$$

Your Turn:

Solve for n.
Check for extraneous solutions.

$$\frac{2}{n} + \frac{n+2}{n+1} = \frac{-2}{n^2+n}$$

Exit Ticket

4) $\frac{b+6}{4b^2} + \frac{3}{2b^2} = \frac{b+4}{2b^2}$

6) $\frac{1}{6x^2} = \frac{1}{2x} + \frac{7}{6x^2}$