Bellwork Alg 2 Monday, March 4, 2019

1. Fifteen percent of the coins in a piggy bank are nickels and five percent are dimes. If there are 220 coins in the bank, how many are not nickels?

A) 80 B) 176 C) 180 D) 187 E) 200

2. In a list of seven integers, 13 is the lowest number, 27 is the highest number, the mean is 23, the median is 24, and the mode is 18. If the numbers 8 and 43 are then added to the list, which of the following will change?

I. the mean *II.* the median *III.* the mode

A) *I* only B) *I* and *II* only C) *I* and *III* only D) *II* and *III* only E) *I*, *II*, and *III*

3. Find the exact solution to each.

a) $\frac{x+3}{8x} - \frac{5}{6} = \frac{2x-1}{3x}$

b) $\frac{x}{3x+10} = \frac{-2}{2x+7}$

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ANSWERS

1. Fifteen percent of the coins in a piggy bank are nickels and five percent are dimes. If there are 220 coins in the bank, how many are not nickels?

A) 80 B) 176 C) 180 D) 187 E) 200

N = # NICKELS
D = # DIMES

IF 15% of the coins ARE nickels, then 85% are NOT NICKELS

find 85% of 220 : $(.85)(220) = 187$

2. In a list of seven integers, 13 is the lowest number, 27 is the highest number, the mean is 23, the median is 24, and the mode is 18. If the numbers 8 and 43 are then added to the list, which of the following will change?

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8 13 24 27 43
min median max
} median & mode are unchanged

mean = 23
mode = 18

3. Find the exact solution to each.

a) $\frac{x+3}{8x} - \frac{5}{6} = \frac{2x-1}{3x}$

$24x\left(\frac{x+3}{8x} - \frac{5}{6}\right) = \left(\frac{2x-1}{3x}\right)24x$

$3(x+3) - 5(4x) = 8(2x-1)$

$3x+9-20x = 16x-8$

$-17x+9 = 16x-8$
$+17x \quad +17x$

$9 = 33x-8$
$+8 \quad +8$

$\frac{17}{33} = \frac{33x}{33}$

$x = 17/33$

b) $\frac{x}{3x+10} = \frac{-2}{2x+7}$

cross multiply:

$-2(3x+10) = x(2x+7)$

$-6x-20 = 2x^2+7x$
$+6x \quad +6x$

$-20 = 2x^2+13x$
$+20 \quad +20$

$2x^2+13x+20 = 0$

40, $+8 \cdot +5$, 13

	x	+4
2x	$2x^2$	+8x
+5	+5x	+20

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

$x = -4, -5/2$