Bellwork Alg 2B Thursday, September 28, 2017

Solve each equation.

1. $\sqrt{33x-11}+5=2x+8$

2. $(x+10)^{\frac{4}{3}}-5=11$

3. $\sqrt{3x-2}+4=x$

4. A baseball team won 54 more games than it lost. If the team played a total of 154 games and there were no ties, how many games did the team win?

A. 50 B. 98 C. 100 D. 102 E. 104

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Answers

Solve each equation.

1. $\sqrt{33x-11}+5=2x+8$

$-5 \quad -5$

$\left(\sqrt{33x-11}\right)^2=(2x+3)^2$

$33x-11=4x^2+12x+9$

$-33x+11 \quad -33x+11$

$0=4x^2-21x+20$

	$2x$	$+3$
$2x$	$4x^2$	$+6x$
$+3$	$+6x$	$+9$

80, -16, -5, -21

	x	-4
$4x$	$4x^2$	$-16x$
-5	$-5x$	$+20$

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

$x=4, \frac{5}{4}$

2. $(x+10)^{\frac{4}{3}}-5=11$

$+5 \quad +5$

$\left((x+10)^{4/3}\right)^{3/4}=(16)^{3/4} \rightarrow \left(\sqrt[4]{16}\right)^3=(\pm 2)^3=\pm 8$

$x+10=\pm 8$

$x=8-10$

$x=-8-10$

$x=-18,-2$

3. $\sqrt{3x-2}+4=x$

$-4 \quad -4$

$\left(\sqrt{3x-2}\right)^2=(x-4)^2$

$3x-2=x^2-8x+16$

$-3x+2 \quad -3x+2$

$0=x^2-11x+18$

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

$x=9, \cancel{2}$

$x=9$

4. A baseball team won 54 more games than it lost. If the team played a total of 154 games and there were no ties, how many games did the team win?

A. 50 B. 98 C. 100 D. 102 E. 104

$x=$ # games lost

wins $=x+54$

TOTAL # games = WINS + LOSSES

$154=(x+54)+x$

$154=2x+54$

$-54 \quad -54$

$100=2x$

$x=50$ # LOSSES

wins $=50+54$

wins $=104$