Bell work:

Solve by factoring

1) $x^2+x-12=0$

-12	1
$3(4)$	$4-3$

$(x+4)(x-3)$

$x=-4, 3$

(2) $3x^2-7x+6=0$

18	-7
$2(9)$	$2-9$
$3(6)$	$-3 \quad -3$

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

$x=\frac{-2}{3}, 3$

(3) $x^2+14x+49=0$

49	14
$7(7)$	$7+7$

$(x+7)(x+7)$

$x=-7$

10-4 Practice

Solving Radical Equations

Solve each radical equation. Check your solution.

2. $\sqrt{2t} - 3 = 11$

$+3 \quad +3$

$\sqrt{2t} = 14$

$\sqrt{2t}^2 = 14^2$

$\frac{2t}{2} = \frac{196}{2} \quad t = 98$

4. $\sqrt{6c+4}=8$

$\left(\sqrt{6c+4}\right)^2=8^2$

$6c+4=64$

$-4\quad -4$

$6c=60$

$c=10$

6. $2=\sqrt{-3y-5}$

$2^2=\left(\sqrt{-3y-5}\right)^2$

$4=-3y-5$

$+5\qquad +5$

$\frac{9}{-3}=\frac{-3y}{-3}$

$-3=y$

8. $\sqrt{\frac{b^4}{16}}=16$

$\left(\sqrt{\frac{b^4}{16}}\right)^2=16^2$

$\frac{b^4}{16}=256$ (16)

$b^4=4096$

$\sqrt[4]{b^4}=\sqrt[4]{4096}$

$b=8$

10. You decide to install a rope swing at the bend in the river. The time t *in* seconds for the rope swing to make one swing is given by $2\sqrt{\frac{l}{3.3'}}$, where l is the length of the rope swing in feet. If one swing takes 3.5 seconds, how long is the rope swing? Round your answer to the nearest tenth of a foot.

$$\frac{3.5}{2} = \frac{2\sqrt{\frac{L}{3.3}}}{2}$$

$$1.75^2 = \left(\sqrt{\frac{L}{3.3}}\right)^2$$

$$(3.3)\ 3.0625 = \frac{L}{3.3}$$

$$10.1 \text{ ft} = L$$

12. The speed V in feet per second that an acorn falls from a tree is given by $V = \sqrt{64d}$, where d is the distance in feet that the acorn has fallen. An acorn hits the ground at a speed of 28 feet per second. How far did the acorn fall?

$28^2 = \sqrt{64d}^2$

$\frac{784}{64} = \frac{64d}{64}$

$12.25 \text{ ft} = d$