DIRECTIONS: Solve the following equations. Remember to check for extraneous roots. If there are no real solutions, be sure to write that as an answer.

**1.** $3 = \sqrt[3]{12 + 5a}$

$a = 3$

**2.** $\sqrt{6b + 1} - 2 = 0$

$b = {}^{1}/_{2}$

**3.** $\sqrt{5c^2 - 48} = c\sqrt{2}$

$c = 4$

**4.** $\sqrt{d^2 - 19} - 2d + 11 = 0$

$d = 10$

**5.** $m - 3\sqrt{m} = 10$

$m = 25$

**6.** $8f = 1 - 2\sqrt{f}$

$f = {}^{1}/_{16}$

**7.** $\sqrt[4]{2g^2 + 9} = \sqrt[3]{27}$

$g = \pm 6$

**8.** $\frac{\sqrt[3]{x}}{2} = \sqrt[3]{x - 7}$

$x = 8$

**9.** $7 - \sqrt[3]{9c} = 4$ $c = 3$

**10.** $3\sqrt{x} = 12$

$x = 16$

**11.** $x\sqrt{3} = 12$ (Do you see how this is different from #10?)

$x = 4\sqrt{3}$

**12.** $2 + 3\sqrt{x} = 8$

$x = 4$

**13.** $2 + x\sqrt{3} = 8$

$x = 2\sqrt{3}$

**14.** $3x = 7\sqrt{x} - 2$

$x = {}^{1}/_{9}\ , 4$

**15.** $3x = x\sqrt{7} - 2$

$x = -3 - \sqrt{7}$

**16.** $\sqrt{x-7} + \sqrt{x} = 7$

$x = 16$

**17.** $\sqrt{2n-5} - \sqrt{3n+4} = 2$

No real solution