Review: Chapter 1

Factor completely.

1) $20x^3+15x^2+35x$
2) w^3+3w^2-2w-6
3) $z^2+8z-20$
4) $40z^{18}+5z^{12}+10z^6$
5) $125x^3+64y^3$
6) $80x^2-45y^2$
7) $25x^2+9$
8) $10k^2-k-3$
9) $4y^2-23y-35$
10) $4x^2-12x+9$
11) $8x^3-1$
12) $-2x^3+8x^2-6x$
13) $45w^2+6w-3$

Solve.

14) $(2x-3)(x+2)=0$
15) $m^2-3m=0$
16) $p^2=-6p+27$
17) $x^2-3x+1=5$
18) $a^3-a^2-6a=-4a$
19) $25x^2=16$
20) A ball is tossed vertically upward from a building which is 96 feet above the ground. The ball's height above the ground as it travels is modeled by the equation $h=-16t^2+64t+80$ where t is the time (in seconds) the ball has been in flight and h is the height of the ball (in feet) at any particular time. How long does it take for the ball to hit the ground?

ANSWERS to Review: Chapter 1

1) $5x(4x^2+3x+7)$

2) $(w+3)(w^2-2)$

3) $(z+10)(z-2)$

4) $5z^6(8z^{12}+z^6+2)$

5) $(5x+4y)(25x^2-20xy+16y^2)$

6) $5(4x+3y)(4x-3y)$

7) prime

8) $(5k-3)(2k+1)$

9) $(4y+5)(y-7)$

10) $(2x-3)^2$

11) $(2x-1)(4x^2+2x+1)$

12) $-2x(x-1)(x-3)$

13) $3(5w-1)(3w+1)$

14) $-2, \frac{3}{2}$

15) $0, 3$

16) $-9, 3$

17) $-1, 4$

18) $-1, 0, 2$

19) $-\frac{4}{5}, \frac{4}{5}$

20) The ball hits the ground after 5 seconds.