Name: Key

8.5 (day 2)

GCF & Zero Product Practice

For 1 - 6 factor the GCF from the polynomial

1) $15ad + 30a^2d^2$

$15ad(1 + 2ad)$

2) $4d^2 + 16$

$4(d^2 + 4)$

3) $6r^2t - 3rt^2$

$3rt(2r - t)$

4) $-6mp + 4m + 18p - 12$

$2(-3mp + 2m + 9p - 6)$

5) $9ax^3 + 18bx^2 + 24cx$

$3x(3ax^2 + 6bx + 8c)$

6) $4b^2 - 12b + 2b - 6$

$2(2b^2 - 6b + b - 3)$

For 7-15, solve each equation. Check your solutions and the number of solutions. Remember, you may have to factor first.

7) $x(x - 32) = 0$

$0, 32$

8) $4b(b + 4) = 0$

$0, -4$

9) $(y - 3)(y + 2) = 0$

$3, -2$

10) $(4y + 8)(3y - 4) = 0$

$-2, \frac{4}{3}$

11) $2z^2 + 20z = 0$

$2z(z + 10) = 0$

$-10, 0$

12) $8p^2 - 4p = 0$

$4p(2p - 1) = 0$

$0, \frac{1}{2}$

13) $18x^2 = 15x$

$18x^2 - 15x = 0$

$3x(6x - 5) = 0$

$0, \frac{5}{6}$

14) $14x^2 = -21x$

$14x^2 + 21x = 0$

$7x(2x + 3) = 0$

$0, -\frac{3}{2}$

15) $8x^2 = -26x$

$8x^2 + 26x = 0$

$2x(4x + 13) = 0$

$0, -\frac{13}{4}$

16) A landscaping company has been commissioned to design a triangular flower bed for a mall entrance. The final dimensions of the flower bed have not been determined, but the company knows that the height will be two feet less than the base. The area of the flower bed can be represented by the equation $A = \frac{1}{2}b^2 - b$.

a. Write this equation in factored form.

$A = \frac{1}{2}b(b - 1)$

b. Suppose the base of the flower bed is 16 feet. What will be its area?

$A = \frac{1}{2}(16)[16 - 1]$

$A = 8(15)$

$A = 120 ft^2$