Secondary Math 2 HONORS

Name Key

Unit 2 Solving Quadratics Review

Date / Period

Explain each property/theorem. Give an example to aid your explanation.

1) Zero Product Property

If two things multiply to get 0, then one of these things must be 0

2) Fundamental Theorem of Algebra

The degree (highest exponent) tells you how many solutions there are

Describe when to use each strategy to solve a quadratic.

3) Factoring

From $ax^2+bx+c=0$, if there are two numbers that multiply to get acx^2 but add to get bx.

(When the glasses work)

4) Taking a square root

When there is only x^2 or $(x-h)^2$

5) Complete the square

If it doesn't factor & $a=1$ and b is even

6) Quadratic formula

When nothing else works...

(or literally any time)

Find each product.

7) $(7n+3)(7n+4)$

$49n^2+49n+12$

8) $(2n+3)(3n+4)$

$6n^2+17n+12$

9) $(2v + 4)^2$

$4v^2 + 16v + 16$

10) $(8p - 4)^2$

$64p^2 - 64p + 16$

Factor each completely.

11) $m^2 + m - 2$

$(m+2)(m-1)$

12) $2m^3 + 34m^2 + 140m$

$2m(m+7)(m+10)$

13) $25r^2 - 40r + 16$

$(5r-4)(5r-4)$

or

$(5r-4)^2$

14) $16k^2 - 9$

$(4k+3)(4k-3)$

15) $v^2 - 1$

$(v+1)(v-1)$

Solve each equation by factoring.

16) $p^2 - 7p + 9 = 3$

$p = 6, 1$

17) $2m^2 + 8m - 8 = -8$

$m = -4, 0$

18) $3m^2 - 21m + 22 = 4$

$m = 6, 1$

19) $90x^2 = 36 + 78x$

$x = \frac{6}{5}, -\frac{1}{3}$

20) $5v^2 + 27v = 56$

$v = \frac{8}{5}, -7$

21) $10x^2 + 15x = 100$

$x = \frac{5}{2}, -4$

Solve each equation by taking square roots.

22) $3k^2 + 7 = -40$

$k = \frac{\pm i\sqrt{141}}{3}$

23) $7 - 7n^2 = -644$

$n = \pm\sqrt{93}$

24) $4k^2 - 2 = -55$

$k = \pm \frac{i\sqrt{53}}{2}$

25) $-(x - 3)^2 - 7 = 12$

$x = 3 \pm i\sqrt{19}$

26) $6(x + 4)^2 + 8 = -10$

$x = -4 \pm i\sqrt{3}$

Solve each equation by completing the square.

27) $x^2 + 18x + 91 = 6$

$x = -9 \pm 2i$

28) $k^2 + 4k - 100 = -4$

$k = 8, -12$

29) $n^2 + 10n + 28 = 7$

$n = -3, -7$

30) $r^2 - 8r + 16 = -4$

$r = 4 \pm 2i$

Solve each equation with the quadratic formula.

31) $12a^2 + 5 = -12a$

$a = \frac{-3 \pm i\sqrt{6}}{6}$

32) $7v^2 = 7 + 9v$

$v = \frac{9 \pm \sqrt{277}}{14}$

33) $10v^2 - 11v = 2$

$v = \frac{11 \pm \sqrt{201}}{20}$

34) $11m^2 = -9 - 12m$

$m = \frac{-6 \pm 3i\sqrt{7}}{11}$