Factoring Review

Date_____

Factor each completely.

1) $56b^3 - 40b^2 - 7b + 5$

$(8b^2 - 1)(7b - 5)$

2) $175a^3 - 245a^2 - 70a + 98$

$7(5a^2 - 2)(5a - 7)$

3) $-4n^2 - 32n$

$-4n(n + 8)$

4) $-4p^3 - 4p^2 + 224p$

$-4p(p - 7)(p + 8)$

5) $3n^2 - 9n - 120$

$3(n - 8)(n + 5)$

6) $r^2 + 3r - 18$

$(r + 6)(r - 3)$

7) $3x^2y^2 - 243y^4$

$3y^2(x + 9y)(x - 9y)$

8) $a^2 + 10ab + 9b^2$

$(a + b)(a + 9b)$

9) $5x^2 - 3x - 2$

$(5x + 2)(x - 1)$

10) $-3k^3 + 13k^2 - 10k$

$-k(3k - 10)(k - 1)$

11) $-6p^3 + 5p^2 + 6p$

$-p(2p - 3)(3p + 2)$

12) $60n^2 - 78n - 180$

$6(2n - 5)(5n + 6)$

13) $64x^3 - 27$

$(4x - 3)(16x^2 + 12x + 9)$

14) $-x^3 - 8$

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

Solve each equation by factoring.

15) $5x^2 + 18x - 8 = 0$

$\left\{\frac{2}{5}, -4\right\}$

16) $3v^2 + 7v - 20 = 0$

$\left\{\frac{5}{3}, -4\right\}$

Solve each equation with the quadratic formula.

17) $9x^2 - 5x - 6 = 0$

$\left\{\frac{5 + \sqrt{241}}{18}, \frac{5 - \sqrt{241}}{18}\right\}$

18) $8p^2 + p - 6 = 0$

$\left\{\frac{-1 + \sqrt{193}}{16}, \frac{-1 - \sqrt{193}}{16}\right\}$

19) $3b^2 - 11b - 14 = 0$

$\left\{\frac{14}{3}, -1\right\}$

20) $12x^2 + 5x - 10 = 0$

$\left\{\frac{-5 + \sqrt{505}}{24}, \frac{-5 - \sqrt{505}}{24}\right\}$