

## Q3 - Homework 3

Date \_\_\_\_\_ Period \_\_\_\_\_

**Factor each completely.**

1)  $4n^3 - 5n^2 + 4n - 5$

2)  $8b^3 - 20b^2 + 6b - 15$

3)  $8x^3 - 6x^2 + 20x - 15$

4)  $4x^3 + 10x^2 + 10x + 25$

5)  $10x^3 - 6x^2 + 25x - 15$

6)  $r^3 + 4r^2 + 3r + 12$

7)  $k^3 + 5k^2 + 3k + 15$

8)  $9p^3 - 15p^2 + 6p - 10$

9)  $15n^3 + 9n^2 + 20n + 12$

10)  $5n^3 + 15n^2 - 2n - 6$

11)  $3x^3 - 5x^2 - 12x + 20$

12)  $16b^3 + 20b^2 + 4b + 5$

13)  $15uv - 3u + 10v - 2$

14)  $12a^2z - 8a^2c - 3xz + 2xc$

15)  $15mn - 10b - 6m + 25bn$

16)  $3xy - 4 - 2x + 6y$

**Solve each equation by factoring.**

17)  $(n - 2)(n - 4) = 0$

18)  $(5m - 2)(m - 5) = 0$

19)  $(x + 4)(x - 2) = 0$

20)  $k(k + 1) = 0$

**Tip: Set up and solve a system of linear equations for these problems.**

- 21) A boat traveled 234 total miles downstream and back. The trip downstream took 13 hours. The trip back took 39 hours. Find the speed of the boat in still water and the speed of the current.
- 22) The local amusement park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 6 vans and 11 buses with 632 students. High School B rented and filled 12 vans and 7 buses with 484 students. Each van and each bus carried the same number of students. Find the number of students in each van and in each bus.