Algebra 1 - Mr. Cantlin - All work on looseleaf!   Name_____

Practice for Q3OBQ3 Reference: Ch. 9-2

Date_____ Period_____

Factor each completely.

1) $20a^6 - 15a^5$

2) $72k^5 + 16k^4$

3) $7xy^3 + 56x^2y^2 + 49x^4$

4) $4v^6u^2 + 4v^5u^2 - 16v^6$

5) $6m^3 - 2m^2 + 3m - 1$

6) $10n^3 - 4n^2 + 5n - 2$

7) $20r^3 + 16r^2 + 25r + 20$

8) $3x^3 + 6x^2 + 5x + 10$

9) $4b^3 - 5b^2 + 20b - 25$

10) $n^3 - 2n^2 + n - 2$

11) $25v^3 + 10v^2 + 5v + 2$

12) $15x^3 - 3x^2 + 25x - 5$

13) $20n^3 - 12n^2 + 5n - 3$

14) $6a^3 + 15a^2 + 4a + 10$

15) $2k^3 + 5k^2 + 6k + 15$

16) $3x^3 + 4x^2 + 12x + 16$

17) $3bc + 4bd + 3x^2c + 4x^2d$

18) $xy - 4xn^2 + 2ny - 8n^3$

19) $5xy + 6b^2 + 10xb + 3by$

20) $20xz + 2yh + 5xh + 8yz$

Solve each equation by factoring.

21) $(n - 3)^2 = 0$

22) $(5x - 2)(3x + 5) = 0$

23) $(m - 2)(5m - 4) = 0$

24) $(r - 2)(r - 4) = 0$

25) $x(x - 2) = 0$

26) $(4n - 1)(3n - 1) = 0$

27) $(b + 1)(b - 3) = 0$

28) $(2v + 5)(v - 4) = 0$

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

29) A boat traveled 150 miles downstream and back. The trip downstream took 5 hours. The trip back took 15 hours. Find the speed of the boat in still water and the speed of the current.

30) Shreya and Jimmy are selling flower bulbs for a school fundraiser. Customers can buy bags of windflower bulbs and packages of crocus bulbs. Shreya sold 7 bags of windflower bulbs and 12 packages of crocus bulbs for a total of $203. Jimmy sold 1 bag of windflower bulbs and 14 packages of crocus bulbs for a total of $201. Find the cost each of one bag of windflower bulbs and one package of crocus bulbs.

Answers to Practice for Q3OBQ3 Reference: Ch. 9-2 (ID: 11)

1) $5a^5(4a - 3)$

2) $8k^4(9k + 2)$

3) $7x(y^3 + 8xy^2 + 7x^3)$

4) $4v^5(u^2v + u^2 - 4v)$

5) $(2m^2 + 1)(3m - 1)$

6) $(2n^2 + 1)(5n - 2)$

7) $(4r^2 + 5)(5r + 4)$

8) $(3x^2 + 5)(x + 2)$

9) $(b^2 + 5)(4b - 5)$

10) $(n^2 + 1)(n - 2)$

11) $(5v^2 + 1)(5v + 2)$

12) $(3x^2 + 5)(5x - 1)$

13) $(4n^2 + 1)(5n - 3)$

14) $(3a^2 + 2)(2a + 5)$

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

16) $(x^2 + 4)(3x + 4)$

17) $(b + x^2)(3c + 4d)$

18) $(x + 2n)(y - 4n^2)$

19) $(5x + 3b)(y + 2b)$

20) $(5x + 2y)(4z + h)$

21) $\{3\}$

22) $\left\{\dfrac{2}{5}, -\dfrac{5}{3}\right\}$

23) $\left\{2, \dfrac{4}{5}\right\}$

24) $\{2, 4\}$

25) $\{2, 0\}$

26) $\left\{\dfrac{1}{4}, \dfrac{1}{3}\right\}$

27) $\{-1, 3\}$

28) $\left\{-\dfrac{5}{2}, 4\right\}$

29) boat: 20 mph, current: 10 mph

30) bag of windflower bulbs: $5, package of crocus bulbs: $14