

The deadline for all homework assignments is the one specified in Archie before 11:59 pm. As discussed in class, It must be correctly uploaded in order to be graded. Show all your work and justifications.

For Exercises 57–84, factor completely.

$$57. 30x^4 + 70x^3 - 120x^2 - 280x$$

$$10x(3x + 7)(x + 2)(x - 2)$$

$$60. c^2 - z^2 + 8z - 16$$

$$(c + z - 4)(c - z + 4)$$

$$63. (x^2 - 2)^2 - 3(x^2 - 2) - 28$$

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

$$66. (y^3 + 34)^2 - 49$$

$$(y^3 + 41)(y + 3)(y^2 - 3y + 9)$$

$$69. (x + y)^3 + z^3$$

$$(x + y + z)(x^2 + 2xy + y^2 - xz - yz + z^2)$$

$$81. x^2 - y^2 - x + y$$

$$(x - y)(x + y - 1)$$

$$82. a^2 - b^2 - a - b$$

$$(a + b)(a - b - 1)$$

$$58. 4y^4 - 10y^3 - 36y^2 + 90y$$

$$2y(2y - 5)(y + 3)(y - 3)$$

$$61. 30x^3y + 125x^2y + 120xy$$

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

$$64. (y^2 + 2)^2 + 5(y^2 + 2) - 24$$

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

$$67. (x + y)^2 - z^2$$

$$(x + y + z)(x + y - z)$$

$$70. (a + 5)^3 - b^3$$

$$(a + 5 - b)(a^2 + 10a + 25 + ab + 5b + b^2)$$

$$73. (c - 3)^2 - (2c - 5)^2$$

$$(3c - 8)(-c + 2) \text{ or } -(3c - 8)(c - 2)$$

$$76. t^7 + 27t^4 - t^3 - 27$$

$$(t + 3)(t^2 - 3t + 9)(t^2 + 1)(t - 1)(t + 1)$$