

190, Prof. Santoro, Quiz 2, September 17, 2015

NAME: Answers

Write clear answers for the following questions:

1. Factor completely:

(a) $x^2 - 2x - 8$

$$x^2 - 2x - 8 = (x + 2)(x - 4).$$

(b) $4x^2 + 4xy + y^2$

$$4x^2 + 4xy + y^2 = (2x + y)^2.$$

2. Simplify the following:

(a) $\sqrt{81x^2 + 81}$

$$\sqrt{81x^2 + 81} = \sqrt{9^2(x^2 + 1)} = [9^2(x^2 + 1)]^{\frac{1}{2}} = 9[(x^2 + 1)]^{\frac{1}{2}} = 9\sqrt{x^2 + 1}.$$

(b) $(8a^3b^{-4})(2a^{-5}b^5)^{-1}$

$$(8a^3b^{-4})(2a^{-5}b^5)^{-1} = (8a^3b^{-4})\left(\frac{1}{2}a^5b^{-5}\right) = 4a^8b^{-9} = \frac{4a^8}{b^9}.$$