

Name: _____

Place your answers in the spaces provided. You must show correct work to receive credit.

- (6 pts) 1. Given $h(t) = \frac{\sqrt{4t+13}}{t^2-2}$, find and simplify $h(-2)$. Leave your answer as a fraction in lowest terms. Do not use a calculator.

- (8 pts) 2. Simplify. Do not leave negative exponents in your answer.

$$a^{\frac{1}{2}} b^{-\frac{3}{4}}^{12}$$

- (8 pts) 3. Subtract and simplify.

$$\frac{a}{a+3} - \frac{4}{a-5}$$

Name: _____

Place your answers in the spaces provided. You must show correct work to receive credit.

(14 pts) 4. Multiply and simplify. Express your answer as a polynomial.

(6 pts) (a) $(x + 4)(x - 5)$

(8 pts) (b) $(3x - 2y)^2$

(16 pts) 5. Perform the indicated operation and simplify.

(8 pts) (a) $\frac{8x^7}{9y^9} \div \frac{12x^3}{y^5}$

(8 pts) (b) $\frac{x^2 + 3x + 2}{x^2 - 1} \cdot \frac{x - 3}{x^2 - x - 6}$

Name: _____

Place your answers in the spaces provided. You must show correct work to receive credit.

(14 pts) 6. Factor each of the following completely.

(8 pts) (a) $3x^3 - 14x^2 - 5x$

(6 pts) (b) $2a^2 - 32b^2$

(12 pts) 7. Solve for x . Check your answer(s).

$$\frac{2x}{x+3} + \frac{4}{x} = \frac{18}{x^2+3x}$$

 $x =$

Name: _____

Place your answers in the spaces provided. You must show correct work to receive credit.

- (12 pts) 8. Two consecutive odd integers are such that three times the first plus the square of the second is 64. Find the two consecutive odd integers. (Name a variable, set up an equation, and solve.)

first odd integer =

second odd integer =

- (10 pts) 9. Rebecca rides her bike 6 miles per hour faster than Melissa. In the same amount of time it takes Melissa to ride 9 miles, Rebecca rides 14 miles. Find the rate at which Melissa rides her bike. (Name a variable, set up an equation, and solve.)

Name: _____