

Name: _____

Student ID: _____

Instructor: _____

Class Hour: _____

INSTRUCTIONS:

- (1) **There is no credit for guessing. You must show your work to receive credit!**
- (2) Please fill in all the above information and write your name on the top of each of the 4 exam pages.
- (3) The point value on each problem appears to the left of the problem.
- (4) You must show sufficient work to justify all answers. Correct answers with inconsistent work may not be given credit.
- (5) No partial credit will be given on problems 1-3. Partial credit may be obtained on problems 4-10 provided sufficient work is shown.
- (6) Circle the letter of the correct answer in problems 1-3, and write the answers to problems 4-10 in the space provided.
- (7) No books or paper are allowed. Calculators may be used where appropriate.
- (8) The exam is self-explanatory. **Please do not ask the instructor to interpret any of the exam questions.**

Page	Points	Max Possible
1		24
2		32
3		22
4		22
Total		100

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Circle your answer to problems 1-3. You must show work receive credit.

(8 pts.) 1. Express as a polynomial.

$$(5x^3 + 8x^2 + 5) - (2x^4 - 2x^2 + 3)$$

- A. $3x^3 + 10x^2 + 2$
 B. $7x^3 + 6x^2 + 8$
 C. $-2x^4 + 5x^3 + 10x^2 + 2$
 D. $3x^4 + 5x^3 + x^2 + 8$
 E. $-2x^4 + 5x^3 + 6x^2 + 8$
 F. None of the above.

(8 pts.) 2. If $y > 0$ and $x > y$, then which one of the following is true?

{ Write down whatever you are thinking that leads you to arrive at }
 { your answer. You may write down words, symbols or numbers }.

- A. $\frac{y-x}{xy} > 0$
 B. $\frac{y-x}{xy} < 0$
 C. $xy < 0$
 D. $y - x > 0$
 E. Not enough information

(8 pts.) 3. Rationalize the denominator and simplify.

$$\frac{\sqrt{t} - 4}{\sqrt{t} + 3}$$

- A. $\frac{t - 7\sqrt{t} + 12}{t - 9}$
 B. $\frac{t^2 - 7\sqrt{t} + 12}{t^2 - 9}$
 C. $\frac{t - 16}{t + 7\sqrt{t} + 12}$
 D. $\frac{t - 16}{t - 9}$
 E. $\frac{t^2 - 7\sqrt{t} + 12}{t + 9}$

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

(16 pts.) 4. Factor completely.

(8 pts.) a) $2x^6 - 32x^2$

(8 pts.) b) $3x^2y^2 - 15x^2 - 4y^2 + 20$

(8 pts.) 5. Solve the equation for b.

$$\frac{G}{b} = F + \frac{3T}{b}$$

b =

(8 pts.) 6. Simplify the expression. Eliminate all negative exponents in your answer.

$$\frac{-8x^9}{y^{-6}}^{-\frac{5}{3}}$$

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

(10 pts.) 7. Solve the equation for x.

$$\frac{2x-1}{3x^2-x-10} + \frac{x}{x-2} = \frac{3x}{3x+5}$$

x =

(12pts.) 8. Perform the indicated operation and simplify completely.

$$\frac{3x^2-x-2}{x^2-16} \div \frac{x^2-6x+5}{x^2+x-20}$$

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

- (12 pts.) 9. How much 45% saline solution and how much 25% saline solution should be mixed to produce 96 ml of 38% saline solution? Name a variable, set up an equation and solve.

Amount of 45% saline solution =

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Amount of 25% saline solution =

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- (10 pts.) 10. Car A leaves Hickville at 1:00 PM heading towards Snobtown, which is 310 miles away. At 2:00 PM, car B leaves Snobtown heading towards Hicksville traveling 10 miles per hour faster than Car A. If they meet at 4:30 PM, what is Car A's speed? Name a variable, set up an equation and solve.

Car A's speed =

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