

Final Exam

MATH 050

Saturday, June 50, 2038

7:90 – 9:90 PM

Hopewell 6873

Instructions: Show all work. Failure to show work may result in loss of credit. Write your solutions in the space provided on the *answer sheets*. Do *not* hand in scratch paper. There are fifteen questions. You may use your scientific calculators (all types, except for those that are programmable!). Decimal number notation is allowed only in *Questions 3 and 12*. Some partial credit *may* be given. Remember to *simplify* your answers, please. **Good Luck!**

- 1) Multiply or divide as indicated and write your answers in lowest terms.
(a) $\frac{18}{49} \cdot \frac{28}{53}$; (b) $\frac{44}{19} \div \frac{55}{25}$.
- 2) Write 781 as the product of primes.
- 3) After a 5% pay raise the salary is \$38,430 . What was the salary before the raise?
- 4) Perform the indicated operations and write your answer in lowest terms. $\frac{11}{7} - \frac{3}{11} + \frac{7}{3}$.
- 5) Solve. (a) $x(x - 4) = -3$; (b) $x^3 - 4x^2 + 3x = 0$.
- 6) Find an equation of the line through $(-5, 7)$ and $(6, -8)$.
- 7) Determine the slope and the intercepts of the line whose equation is $11x - 7y = 10$.
- 8) Graph. $5x + 3y = 8$. 9) Evaluate $-5x^3y^{-2}$ for $x = -2$ and $y = 7$.
- 10) Find the following products. (a) $(z + 4)(z^2 - 3z + 10)$; (b) $(6y - 1)^3$.
- 11) Simplify the following expressions. Write each result using positive exponents only.
(a) $(x^{-3}y^2)^{-5}$; (b) $\left(\frac{a^{-2}b^4}{a^4b^{-7}}\right)^{-3}$.
- 12) Evaluate the following expression and write your answer in scientific notation. $\frac{7.68 \times 10^{-84}}{2.56 \times 10^{29}}$
- 13) Divide. $\frac{6x^3 - 5x^2 + 22x - 8}{3x - 1}$.
- 14) Factor completely. (a) $4x^3 + 108$; (b) $2x^2 + 18$.
- 15) The sum of two numbers is 12 , and the sum of their squares is 90 . Find the numbers.

You are welcome to keep this *Questions Sheet* for your files.

Points: 10+10, 10, 10; 10, 10+10, 10, 10; 10, 10, 10+10, 10+10; 10, 10, 10+10, 10.