

Math 4
Exam 1
September 3, 1997

Name _____

Instructor _____

Class Time _____

Show your work.

1. Solve for x

(4) a) $\frac{1}{x-2} + \frac{3}{x+3} = \frac{4}{x^2+x-6}$

(4) b) $|x-10| = x^2 - 10x$

a) $x =$ _____

b) $x =$ _____

2. Solve for r (Answer must be in simplest fractional form.)

(8) $S = \frac{rL - a}{r - 1}$

$r =$ _____

3. Solve for x by factoring (Show work for credit.)

(8) $x^2 + 9 = 10x$

$x =$ _____

4. Solve by completing the square. (Show work.) Answer must be in simplest radical form or simplest $a + bi$ form)

(8) $4x^2 - 4x - 99 = 0$

Interval _____

7. Perform the operation and write the result in standard $(a + bi)$ form

(5)
$$\frac{(2 - 3i)(5i)}{2 + 3i}$$

Std. Form _____

8. Solve for x .

(5)
$$x^4 + 2x^3 - 8x - 16 = 0$$

$x =$ _____

9. Solve for x .

(7)
$$\sqrt{2x + 7} - x = 2$$

$x =$ _____

10. You commute 56 miles one way to work. The trip to work takes 10 minutes longer than the trip home.
(7) Your average speed on the trip home is 8 miles per hour faster. What is your average speed on the trip home?
11. Find the standard form of the equation of the specified circle: endpoints of a diameter are (-4,-1), (4,1).
(6)

In exercises 12-17 match the equation with its graph. Place the correct letter in the blank. [The graphs are labeled (a), (b), (c), (d), (e), and (f).] (2 pts ea)

12. $y = 1 - x$ _____

14. $y = \sqrt{9 - x^2}$ _____

16. $y = x^3 - x + 1$ _____

13. $y = x^2 - 2x$ _____

15. $y = 2\sqrt{x}$ _____

17. $y = |x| - 3$ _____