

MTH 135 TEST 5 NOV. 3, 1994

NAME

I. Perform the indicated operations and simplify the following problems as much as possible. (6 points each)

4.
$$\frac{x^2 + 6x + 8}{(2 + x)(3x + 1)} - \frac{6}{3x + 1}$$

5.
$$x\left(\frac{1}{x} + x^{-2}\right)$$

II. Solve for x in each of the following problems. (6 points each)

1.
$$\frac{2}{x} + \frac{2}{x-1} = \frac{5}{x}$$

2.
$$7xy + 2w = 14xw$$

3.
$$\frac{1}{x+3} = \frac{3}{2x}$$

4. $7x + y = 5$

5. $\frac{4x - 11}{x - 4} = 2 + \frac{5}{x - 4}$

II. (con't.)

6. $\frac{x + 3}{y} = z$

7. $\frac{5}{x + 3} = 0$

III. If Tawana can paint a house in 12 hours and Bill can paint the house in 15 hours, then together they can paint the house (assuming they don't get into a paint fight and they can continue working at their normal rate) in: (4 points)

- (a) less than 12 hours. (b) 12 to 15 hours. (c) more than 15 hours.

IV. Solve the following application problems. (8 points each)

1. An airplane whose cruising speed in still air is 220 miles per hour, can travel 520 miles with the wind in the same time it takes to fly 360 miles against the wind. Find the speed of the wind.

2. A river that is 150 feet wide appears to be 1 inch wide on a map. With this scale, if a building appears to 0.4 inches long on the map, how long is the building?

3. A group of college students from Partytown University can finish off a container of punch in 4 hours. A group of college students from Smartytown University takes 20 hours to finish off the same size container of punch. If we get these two groups together for a party and they drink their punch at the same rate, how long will it take them to finish it off?