

Week 8 Math 1508 Worksheet

Problem 1 [sec 7.1]:

Solve the system algebraically:

$$\begin{cases} (x-1)^2 + y^2 = 4 \\ 12x - 6y = 0 \end{cases}$$

Problem 2 [sec 7.2]:

Solve the system by any method and check any solution(s) algebraically:

a.
$$\begin{cases} 2x + 5y = 6 \\ 3x - 4y = 7 \end{cases}$$

b.
$$\begin{cases} \frac{1}{5}x + \frac{2}{3}y = 17 \\ \frac{2}{3}x + \frac{3}{5}y = 8 \end{cases}$$

Problem 3 [sec 7.3]:

Solve the system of linear equations and check any solutions algebraically.

$$\begin{cases} 3x + 5y + z - w = -15 \\ 5x + 7y - z + w = 23 \\ 10x + 11y - z + 2w = 38 \\ -5x + y + 2z - w = -31 \end{cases}$$

Problem 4 [sec 7.4]:

Write the partial fraction decomposition of the rational expressions.

a.
$$\frac{3x+1}{3x^3-13x^2+12x}$$

b.
$$\frac{5}{(x^2+1)(x+3)}$$