Test II 150

Place your answers on the blank to the left. Show your work on a separate sheet. Write your name on the upper right hand corner of this sheet.

1) Add

\[ \frac{3a - 2b + 4}{-2} + \frac{-2a + b - 3}{2} \]

2) Subtract

\[ \frac{3a - 2b + 4}{-2} - \frac{2a - b + 3}{2} \]

3) Multiply

\[ (2a + b)(a + 3b) \]

4) Multiply

\[ (a - 2b)(3a - b) \]

5) Multiply

\[ (2a + b)(3a - b) \]

6) Divide

\[ \frac{x^2 - 3x - 10}{x + 2} \]

7) Divide

\[ \frac{x^2 - 3x - 10}{x - 5} \]

8) Find the equation of the line that passes through (2,3) and (-2,-3).

9) Find the equation of the line that passes through (1,1) and (2,3).

10) Find the equation of the line that passes through (1,1) and (3,2).

11) Are the following lines parallel, perpendicular or neither?
\[ y = 2x - 18 \]
\[ y = -\frac{3}{2}x - 18 \]

12) Are the following lines parallel, perpendicular or neither?
\[ y = 2x - 18 \]
\[ y = -\frac{3}{2}x - 18 \]

13) Solve the following system of equations.
\[ 2x - 3y = 12 \]
\[ 3x + 3y = -12 \]

14) Solve the following system of equations.
\[ 2x - y = 2 \]
\[ 2x + 3y = -2 \]

15) When a crew rows with the current, it travels 16 miles in 2 hours. Against the current, the crew rows 8 miles in 2 hours. Find the rate of the boat in still water and the rate of the current.

16) A hawk can fly 300 miles in 8 hours with the wind. Flying against the wind, the hawk covers only one third the distance in 7 hours. What is the rate of the hawk in still air and the rate of the wind?