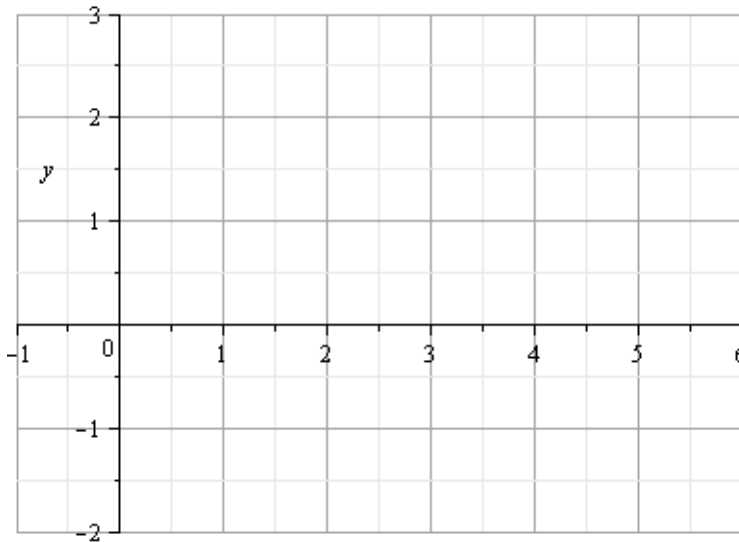


1. Let $f(x) = \frac{2}{3}x - 1$ in the following:

a. (4 pts) Determine the slope and y -intercept of f .

b. (4 pts) Use the slope and y -intercept to graph f here:



c. (4 pts) What is the x -intercept of f ?

d. (4 pts) Is f increasing, decreasing or constant?

2. Compute the discriminant for the following quadratic functions. Find how many zeroes does h have, and whether they are real, nonreal, one of each, or what have you.

a. (4 pts) $h(x) = 4x^2 - 8x + 5$

b. (4 pts) $h(x) = 10x^2 - 19x + 6$

3. Let $f(x) = 10x^2 - 19x + 6$.

a. (4 pts) Find the zeros of f by factoring.

b. (4 pts) Find the zeros of f by quadratic formula.

(4 pts) Find the zeros of $f(x) = x^2 + 2x - 35$ by completing the square.

4. (20 pts) Complete the square for $f(x) = x^2 + 2x - 35$, and re-write it in the form $a(x - h)^2 + k$. Sketch its graph, based on your work. Label the vertex, axis of symmetry, and x - and y -intercepts on your graph. State the range of f .

5. (10 pts) Find the complex zeros of $f(x) = 4x^2 - 8x + 5$. Leave your answer in simplified radical form (no calculator stuff). **(5 bonus points if you solve it by completing the square)**

6. (10 pts) Solve $10x^2 - 19x \geq -6$. Express your answer in both set-builder and interval notation. You've already done about half the work on this one, in #3, on page 2.

Solve the absolute value equations and inequalities. (4 pts each). Same work for 7 – 9. Just interpret the results, differently.

7. $|4x + 3| = 7$

8. $|5x - 1| > 7$

9. $|5x - 1| \leq 7$

10. $|5x - 1| \leq -7$

11. $|5x - 1| > -7$

12. $|5x - 1| = -7$