Math 80 Spring 2019 Test 7 practice Test Name:

Please silence your cell phone.

You must show your steps. If you're unsure whether you have enough work, please ask.

Helpful information

$x_{\text{coor}} = \frac{-b}{2a}$ Given $ax^2 + bx + c = 0$ then $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Standard form $y = ax^2 + bx + c$ Vertex form $y = a(x-h)^2 + k$

$\log_a N = \frac{\ln N}{\ln a}$

1. Expand $\ln\left(xy^2\right)$ using the logarithmic rules. Simplify when possible.

2. Expand $\log\left(\frac{a}{\sqrt{b}}\right)$ using the logarithmic rules. Simplify when possible.

3. Expand $\ln\left(\sqrt{\frac{e}{x}}\right)$ using the logarithmic rules. Simplify when possible.

4. Expand $\log_4\left(16x^3\right)$ using the logarithmic rules. Simplify when possible.

5. Condense $\log\left(x^2-4\right)-\log(x+2)$ using the logarithmic rules. Simplify when possible.

6. Condense $2\ln x+\ln y+\frac{1}{2}\ln z$ using the logarithmic rules. Simplify when possible.

7. Solve $\log(x+10)=2$

8. Solve $\log_2(x-1)+\log_2(x-3)=3$

9. Solve $|6x+5|=13$

10. Solve $1+4|2k-6|=13$

11. Solve $3k - 5 > 4$ and $2(k + 1) \leq 10$. Express the solution set using a graph and interval notation.

12. Solve $-6(y - 4) \leq 24$ or $5y \geq 9y + 12$. Express the solution set using a graph and interval notation.

13. Solve $|2x + 11| \leq 5$. Express the solution set using a graph and interval notation.

14. Solve $|x+7|+4>9$. Express the solution set using a graph and interval notation.

15. Factor, and if possible, reduce. $\dfrac{x^2-5x-14}{xy-3x+2y-6}$.

16. Simplify $\dfrac{2x^2+9x+4}{x+4}\times\dfrac{x-5}{4x^2-1}$.

17. Simplify $\dfrac{x^2-4x-5}{x^2-25}\div\dfrac{4x^2-14x}{2x^2+3x-35}$.