Unit 1 Worksheet 1
Calculus 1

Algebra Review: Expand #'s (1-3) and simplify #'s (4-6).

1. $(3x-9)(2x+1)$ 2. $(5x-2)^2$ 3. $(x+2)(x^2-2x+1)$ 4. $\dfrac{x^2-x-6}{x-3}$ 5. $\dfrac{x^3-9x}{2x-6}$ 6. $\dfrac{2x-2x^2}{x^3-2x^2+x}$

Solve each of the following for the roots/zeros.

7. $x^2-2x-15=0$ 8. $5x^2+18x-8=0$ 9. $x^2+6x+3=0$ 10. $x^3=4x$

Put the following equations into *slope-intercept form* and sketch the graph.

11. $3y-2x=12$ 12. $4x+5y-20=0$ 13. $x=-3$ 14. $y=4$

Find the equation of the line with the given slope passing through one point or given two points.

15. $m=\dfrac{1}{2}$, $(2,3)$ 16. $m=0, (-3,5)$ 17. $m=-2, (3,-4)$

18. m is undefined, $(8,-2)$ 19. $(2,3), (4,8)$ 20. $(4,1), (8,2)$

Find the equation of the line a) parallel to the given line and passing through the given point.
b) perpendicular to the given line and passing through the given point.

21. $x-4y=12, (8,-3)$ 22. $2x-y=8, (-4,3)$