AA1 Practice #2- Transformations Name:

Answer in your notebook when needed

1. **Given the function:** $f(x) = 2\sqrt{x-3} - 4$

a. Name and write the equation of the parent graph

b. State the locator point

c. Find the x and y intercepts, if any

d. Describe the Domain and Range

2. For each of the quadratic equations below, **convert to the indicated form.**

a) $f(x) = -2(x + 4)^2 + 7$ to standard form

b) $g(x) = h(x) = x^2 + 6x - 1$ to vertex form

c) $m(x) = x^2 - 7x - 8$ to factored form

d) $h(x) = 6x^2 + 5x - 6$ to factored form

3. For each of the descriptions below, **write a function/relation** that represents it. **Sketch each of them in your notebook.**

   a. A **linear function** with a slope of 0.5 and through the point (-2, 5)

   b. A **quadratic function** with the vertex at (-3, 5) and that goes through (-2, 3)

   c. A **reciprocal function** with asymptotes y = 3, x = 4 and that passes through (2, 4)

   d. A **square root function** with a locator point at (-2, 3) that passes through (2, 4).

e. A **quadratic function** with x-intercepts at x = 4 and x = -3 & vertex with y-coordinate $-\frac{49}{8}$.

f. A **cubic function** with inflection point at (0, -4) and that passes through (-1, -7).

g. A **circle** with center (2, -3) and radius 3

h. A **sleeping parabola** with vertex at (1, -5) and passes through (2, -2)

i. An **absolute value function** with vertex at (1, 3) and passes through (-2, 9)

j. An **exponential function** (base 2) with asymptote $y = -3$ and y intercept (0, 1)

4. Write equations for the following graphs. Do not forget to find the correct value of "a". **Show work**