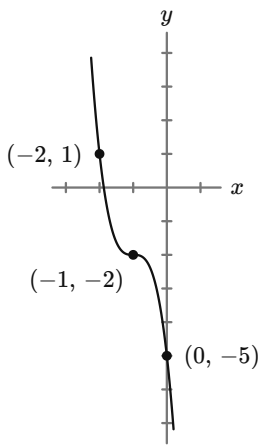
Algebra 2 Unit 1 quiz 3: Graphing by transforming a parent graph, Finding the rule of a transformed graph or table, Transforming the absolute value graph

Name _____ Date _____ Period _____

7 questions, 23 points

1. The figure shows a transformed graph of $y = x^3$, with its center marked. (2 points)



(a) Use the marked point $(-2, 1)$ to find a, and write the rule.

(b) Check your rule at $(0, -5)$.

2. A V with a rule of the form $y = a|x - h| + k$ has axis of symmetry $x = -2$ and passes through $(1, -4)$ and $(-4, 0)$. Find a and k, write the rule, and give the range. (3 points)

3. Let $g(x) = 2\sqrt{-4 - 4x} - 8$. (4 points)

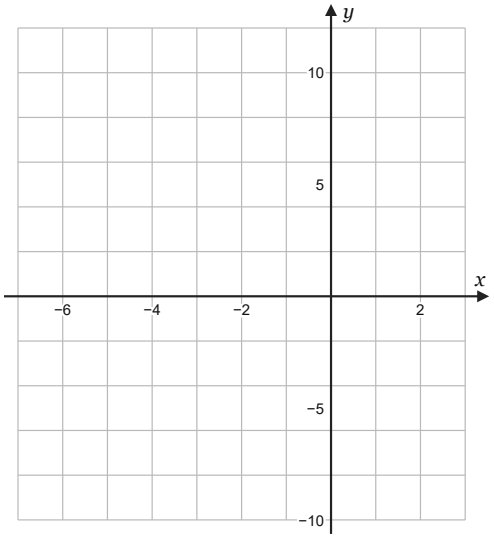
(a) Give the endpoint of the graph of g, and say which way the graph runs from it.

(b) Give the domain and range of g in interval notation.

(c) Find the x-intercept of the graph.

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4. Graph $y = \frac{1}{2}(2x + 6)^2 - 8$ by moving $y = x^2$. Carry the vertex $(0, 0)$ and the parent points $(\pm 2, 4)$ and $(\pm 4, 16)$, sketch the graph, and give its range and every point where it meets an axis. (4 points)

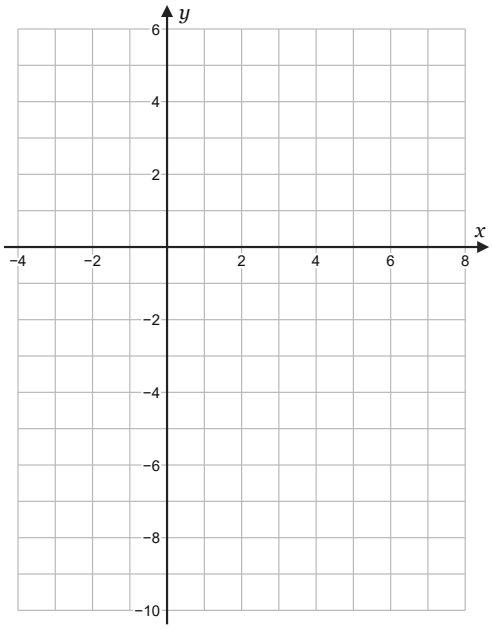


5. Graph $y = \frac{3}{4 - 2x} - 2$ by moving $y = \frac{1}{x}$. (4 points)

(a) Give the asymptotes, and carry the parent points $(1, 1)$, $\left(2, \frac{1}{2}\right)$, $(-1, -1)$ and $\left(-2, -\frac{1}{2}\right)$.

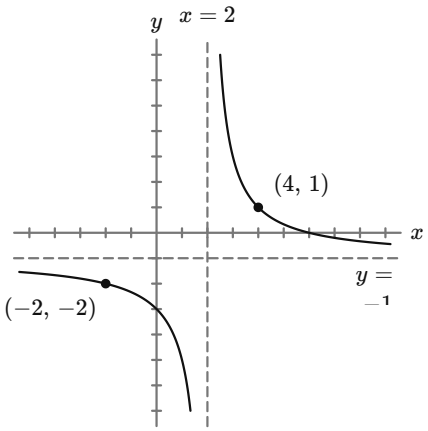
(b) Sketch the graph, and say where its branches sit around the center.

(c) Give the domain and range, and the x-intercept.



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6. The figure shows a transformed graph of $y = \dfrac{1}{x}$ with its asymptotes dashed. (3 points)



(a) Write its rule, and check it with the marked point you did not use.

(b) Use your rule to find the x-intercept and the y-intercept of the graph.

7. The table comes from a rule of the form $y = a|x - h| + k$. (3 points)

x	0	1	2	3	4	5
y	4	2	0	0	2	4

(a) Explain why the vertex is not one of the table's points, and find it.

(b) Write the rule.

(c) Give the range.

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