

Review for Test 5

Name the transformations from the parent function  $f(x)$ .

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| 1. $-f(x+2)$<br><u>Reflection over x-axis</u><br><u>Horizontal Slide Left 2</u> | 2. $3 \cdot f\left(\frac{1}{2}x\right)$<br><u>Vertical Stretch by 3</u><br><u>Horizontal Stretch by <math>\frac{1}{2}</math></u> | 3. $f(-x)+4$<br><u>Reflection over y-axis</u><br><u>Vertical Slide Up 4</u> |
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List the domain and range of the given functions.

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| 4. $f(x) = \sqrt{x-2}$<br>D: <u><math>[2, \infty)</math></u><br>R: <u><math>[0, \infty)</math></u> | 5. $f(x) = 3(x+4)^2 - 1$<br>D: <u><math>(-\infty, \infty)</math></u><br>R: <u><math>[-1, \infty)</math></u> | 6. $f(x) = \frac{1}{x-1} + 2$<br>D: <u><math>(-\infty, 1) \cup (1, \infty)</math></u><br>R: <u><math>(-\infty, 2) \cup (2, \infty)</math></u> |
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List the x-intercepts and y-intercept of the given functions.

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| 7. $f(x) =  x+2  - 1$<br>X: <u><math>(-3, 0)</math> <math>(-1, 0)</math></u><br>Y: <u><math>(0, 1)</math></u> | 8. $f(x) = \frac{1}{2}(x+1)^3 - 4$<br>X: <u><math>(1, 0)</math></u><br>Y: <u><math>(0, -3.5)</math></u> | 9. $f(x) = 2\sqrt{x+4} - 2$<br>X: <u><math>(-3, 0)</math></u><br>Y: <u><math>(0, 2)</math></u> |
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List the relative maximum and minimum points of the given functions.

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| 10. $f(x) = x^3 + 2x^2 - 4x - 5$<br><u><math>(-2, 3)</math></u><br><u><math>(-0.67, -6.48)</math></u> | 11. $f(x) = x^4 + 3x^3 - 2x^2 - 5x + 1$<br><u><math>(-0.62, 2.76)</math></u><br><u><math>(-2.45, -6.84)</math> <math>(0.82, -2.34)</math></u> |
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List the asymptotes of the given functions.

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| 12. $f(x) = \frac{3x+1}{x+4}$<br><u><math>x = -4</math></u><br><u><math>y = 3</math></u> | 13. $f(x) = \frac{x+1}{x^2-4}$<br><u><math>x = 2, x = -2</math></u><br><u><math>y = 0</math></u> | 14. $f(x) = \frac{4x^2-1}{x+5}$<br><u><math>x = -5</math></u> |
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Graph the transformation from the given function  $f(x)$ .

