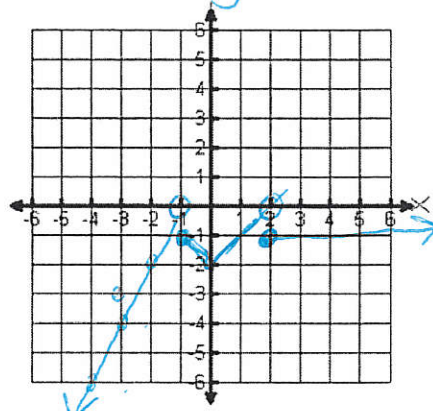


Standard 1A Review

Name: Key Hr: _____

1. Sketch a graph of the piecewise function below.

$$f(x) = \begin{cases} 2x+2, & x < -1 \\ |x|-2, & -1 \leq x < 2 \\ -1, & x \geq 2 \end{cases}$$



Using the function above find the following values given.

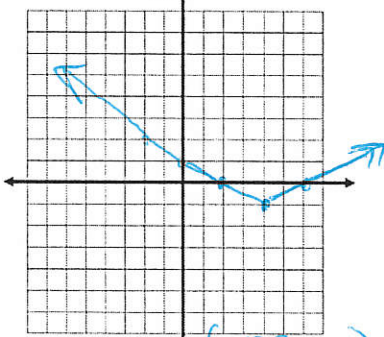
2. $f(5) = -1$ 3. $f(0) = -2$

Describe the transformation(s) done to the parent function $f(x) = |x|$.

4. $g(x) = -2|x-4|+3$ reflect over x-axis, stretch by a factor of 2, $\rightarrow 4, \uparrow 3$

Graph the following function and state the domain and range.

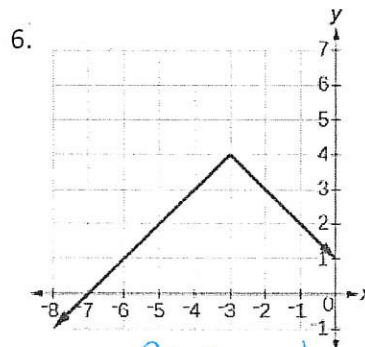
5. $f(x) = \frac{1}{2}|x-4|-1$



Domain: $(-\infty, \infty)$

Range: $[-1, \infty)$

Write the equation of the absolute value function and state the domain and range.



Equation: $f(x) = -|x+3|+4$

Domain: $(-\infty, \infty)$

Range: $(-\infty, 4]$

Write the equation of the described function.

7. An absolute value function shifted left 2 and down 1.

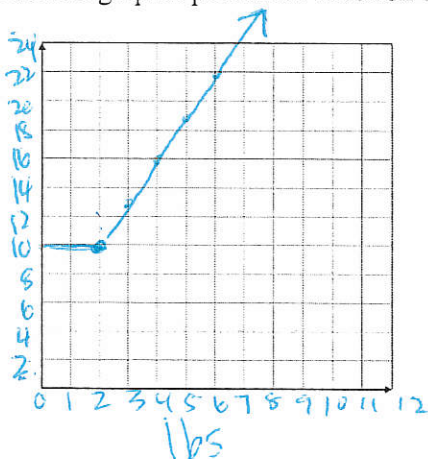
$f(x) = |x+2|-1$

8. An absolute value function shifted right 1, reflected over the x-axis and shifted up 4.

$f(x) = -|x-1|+4$

9. A booth at the farmers market is having a sale on homemade candy. You can buy up to 2 lbs for a flat cost of \$10.00. After that, the candy cost \$3/lb for each additional pound.

Write and graph a piecewise function that represents the cost for candy up to 10 pounds.



$$f(x) = \begin{cases} 10, & x \leq 2 \\ 3x+4, & 2 < x \leq 10 \\ & \text{or } x > 2 \end{cases}$$

Standard 1B Review

Simplify

1. $3x^{\frac{1}{3}} \cdot x^0$

$$\frac{3}{x^{\frac{1}{3}}}$$

2. $2^{\frac{1}{4}} \cdot 2^{\frac{3}{2}}$

$$= 2^{\frac{7}{4}}$$

4. $(3x^4)^4 = 3^4 x^{16}$

$$= 81x^{16}$$

5. $(5x^2)^6 = 5^6 x^{12}$

$$= 15,625x^{12}$$

7. $\left(\frac{2x^3}{3x^5}\right)^{-2} = \frac{2^{-2} x^{-6}}{3^{-2} x^{-10}}$

$$\frac{3^2 x^{10}}{2^2 x^6} = \frac{9x^4}{4}$$

8. $\frac{27x^2 y^{\frac{1}{4}}}{9y^2 x} = \frac{3x}{y^{\frac{7}{4}}}$

$$\frac{3x}{y^{\frac{7}{4}}}$$

10. $\sqrt[4]{x^5} \cdot x^{\frac{1}{4}}$

$$x^{\frac{5}{4}} \cdot x^{\frac{1}{4}} = x^{\frac{6}{4}} = x^{\frac{3}{2}}$$

11. $\sqrt[3]{y^2} \cdot y^{\frac{1}{3}} \cdot \sqrt[4]{y^3}$

$$y^{\frac{2}{3}} y^{\frac{1}{3}} y^{\frac{3}{4}} = y^{\frac{7}{4}}$$

Write the radical in rational exponent form and the rational exponent in radical form.

12. $\sqrt[3]{7^3} = 7^{\frac{3}{3}}$

13. $(\sqrt[3]{5})^7 = 5^{\frac{7}{3}}$

14. $\sqrt[5]{2a^2b^3}$

$$2^{\frac{1}{5}} a^{\frac{2}{5}} b^{\frac{3}{5}}$$

or $(2a^2b^3)^{\frac{1}{5}}$

15. $2^{\frac{2}{3}} = \sqrt[3]{2^2}$

16. $5x^{\frac{1}{4}} = 5\sqrt[4]{x}$

17. $(3x)^{\frac{5}{6}} = \sqrt[6]{(3x)^5}$

18. Evaluate $\sqrt[4]{-81}$

No real sol

19. Evaluate $\sqrt[5]{32}$

2

20. Which is not equivalent? $125^{\frac{2}{3}}$

$$\sqrt[3]{125^2} = 5^2 = 25 \checkmark$$

a) 5^2

25
✓

b) $(25^{\frac{1}{2}})^2$

25
✓

c) $3125^{\frac{2}{5}}$

25
✓

(d) $\sqrt[4]{625}$

5
✗

Name: KEY Hr: _____

3. $4x^{\frac{1}{2}} y^{\frac{3}{4}} z^{\frac{1}{3}} \cdot 6x^{\frac{1}{2}} y^{\frac{1}{2}} z^{\frac{1}{3}}$

$$= 24xy^{\frac{5}{4}}z^{\frac{2}{3}}$$

6. $\left(\frac{8x}{27y}\right)^{\frac{1}{3}}$

$$\frac{8^{\frac{1}{3}} x^{\frac{1}{3}}}{27^{\frac{1}{3}} y^{\frac{1}{3}}} = \frac{2x^{\frac{1}{3}}}{3y^{\frac{1}{3}}}$$

9. $\frac{8n^{\frac{1}{2}} m^{\frac{1}{3}}}{24m^{\frac{2}{3}} n^{\frac{1}{4}}}$

$$\frac{1m^{\frac{2}{3}} m^{\frac{1}{3}}}{3n^{\frac{1}{2}} n^{\frac{1}{4}}} = \frac{m}{3n^{\frac{3}{4}}}$$