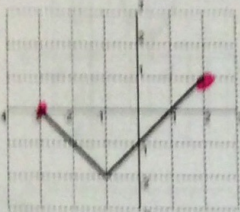
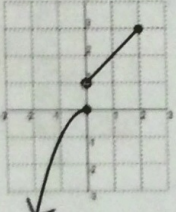
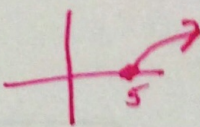


Pre-Calculus FINAL EXAM REVIEW DO THIS ON OWN PAPER!

1st Six Weeks:

State the domain and range in interval notation and determine if each is function or not.

<p>1. </p> <p>D: <math>[-3, 2]</math> R: <math>[-2, 1]</math></p>	<p>2. </p> <p>D: <math>(-\infty, 2]</math> R: <math>(-\infty, 3]</math></p>	<p>3. <math>y = \sqrt{x-5}</math></p> <p>D: <math>[5, \infty)</math> R: <math>[0, \infty)</math></p> 
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State the transformation(s) & stretch or shrink.

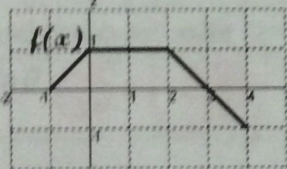
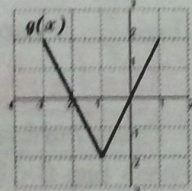
<p><math>f(x) = x^3</math></p> <p>4. <math>g(x) = (x+2)^3</math> Left 2 <math>h(x) = -x^3 + 1</math> Reflection up 1</p>	<p><math>f(x) = \lfloor x \rfloor</math></p> <p>5. <math>g(x) = \lfloor x \rfloor - 2</math> Down 2 <math>h(x) = 2\lfloor x \rfloor</math> Vertical stretch 2</p>	<p><math>f(x) =</math></p> <p>6. <math>g(x) = -2x^2 + 1</math> Reflection vs. 2 up 1 <math>h(x) = (x-1)^2 + 3</math> up 3 R+1</p>	<p>7. <u>oops</u></p>
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Evaluate each function or composite and simplify.

$f(x) = |2x+3|$     $g(x) = x^2 - x$     $h(x) = 5x+1$     $t(x) = \begin{cases} 3x^2 - 1, & x > -1 \\ 4 - x, & x \leq -1 \end{cases}$     $s(x) = \lfloor x - 5 \rfloor$

<p>8. <math>g(-2) = (-2)^2 - (-2)</math> <math>= 4 + 2</math> <math>= 6</math></p>	<p>9. <math>(f \circ g)(-1)</math> <math>g(-1) = (-1)^2 - (-1) = 2</math> <math>f(2) =  2(2)+3  = 7</math></p>	<p>10. <math>(g-h)(x)</math> <math>x^2 - x - (5x+1)</math> <math>x^2 - x - 5x - 1</math> <math>x^2 - 6x - 1</math></p>	<p>11. <math>(h \circ g)(x) = 5(x^2 - x) + 1</math> <math>= 5x^2 - 5x + 1</math></p>
<p>12. <math>t(-2) = 4 - (-2)</math> <math>= 6</math></p>	<p>13. <math>t(4) = 3(4)^2 - 1</math> <math>= 47</math></p>	<p>14. <math>s(8.2) = \lfloor 8.2 - 5 \rfloor</math> <math>= \lfloor 3.2 \rfloor</math> <math>= 3</math></p>	<p>15. <math>s(1.5) = \lfloor 1.5 - 5 \rfloor</math> <math>= \lfloor -3.5 \rfloor</math> <math>= -4</math></p>

16. Evaluate the graphs at the given values.

	<p>A. <math>(f+g)(1)</math> <math>f(1) = 1</math>   <math>g(1) = 2</math> <math>1 + 2 = 3</math></p>	<p>B. <math>(g-f)(0)</math> <math>g(0) = 0</math>   <math>f(0) = 1</math> <math>0 - 1 = -1</math></p>
	<p>C. <math>(f \cdot g)(-1)</math> <math>f(-1) = 0</math>   <math>g(-1) = 1</math> <math>0 \cdot 1 = 0</math></p>	<p>D. <math>f(g(-2))</math> <math>g(-2) = 0</math>   <math>f(0) = 1</math></p>

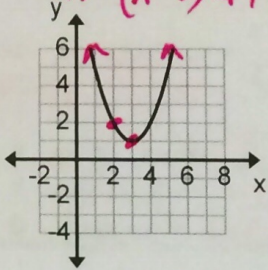
17. State the inverse function of each of the following...

<p>A. <math>f(x) = 5 - 2x</math> <math>x = 5 - 2y</math> <math>\frac{x-5}{-2} = y</math> <math>f^{-1}(x) = \frac{5-x}{2}</math></p>	<p>B. <math>f(x) = 2x^3 - 1</math> <math>x = 2y^3 - 1</math> <math>\sqrt[3]{\frac{x+1}{2}} = y</math> <math>f^{-1}(x) = \sqrt[3]{\frac{x+1}{2}}</math></p>	<p>C. <math>f(x) = x^2 + 5</math>   D: <math>[0, \infty)</math> <math>x = y^2 + 5</math> <math>\sqrt{x-5} = y</math> <math>f^{-1}(x) = \sqrt{x-5}</math>   D: <math>(0, \infty)</math></p>
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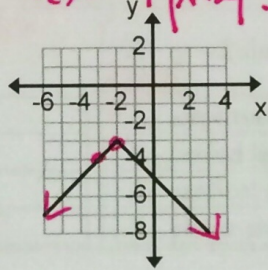


Write the equations of the graphs and state the transformation(s).

18.  $f(x) = (x-3)^2 + 1$

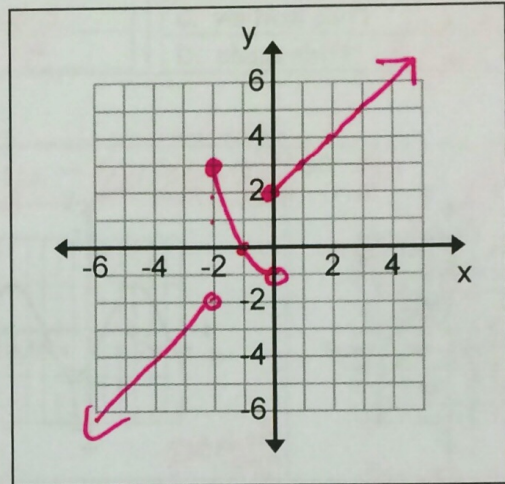


19.  $f(x) = -|x+2| - 3$

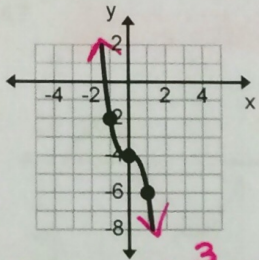


22. Graph:

$$f(x) = \begin{cases} |x| + 2, & x \geq 0 \\ x^2 - 1, & -2 \leq x < 0 \\ x, & x < -2 \end{cases}$$

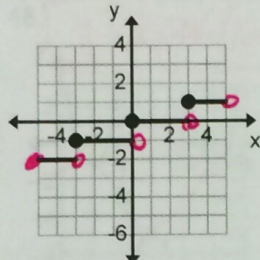


20.



$f(x) = -2x^3 - 4$

21.



$f(x) = \lfloor \frac{1}{3}x \rfloor$

Miscellaneous Angles.

23. In which quadrant does an angle of  $-790^\circ$  terminate? **IV**

24. In which quadrant does an angle of  $1350^\circ$  terminate? **Neg y-axis**

25. In which quadrant does an angle of  $\frac{10\pi}{3}$  terminate? **III**

26. Find an angle co-terminal with  $264^\circ$ .  **$264 + 360 = 624^\circ$  OR  $-96^\circ$**

27. Find an angle co-terminal with  $\frac{7\pi}{12}$ .  **$\frac{7\pi}{12} + 2\pi = \frac{19\pi}{12}$  OR  $-\frac{5\pi}{12}$**

28. Express  $785^\circ$  in radians.  **$\frac{1800}{\pi} = \frac{785}{x} \Rightarrow x = \frac{157\pi}{36}$**

29. Express  $\frac{11\pi}{9}$  in degrees.  **$x = 220^\circ$**

30. Find the reference angle for  $286^\circ$ .  **$74^\circ$**

31. Find the reference angle for  $\frac{7\pi}{12}$ .  **$\frac{5\pi}{12}$**

32. Find the exact value for each indicated trig. function, if the point  $(3, -5)$  lies on the terminal side of  $\theta$ .

A.  $\sin \theta = \frac{-5}{\sqrt{34}} = \frac{-5\sqrt{34}}{34}$

B.  $\sec \theta = \frac{\sqrt{34}}{3}$

C.  $\tan \theta = \frac{-5}{3}$

D.  $\cot \theta = \frac{-3}{5}$

33. If  $\cos \theta = -\frac{2}{5}$  and  $\theta$  is in Quadrant III, then find  $\csc \theta = \frac{-5}{\sqrt{21}} = \frac{-5\sqrt{21}}{21}$

34. If  $\sin \theta = -\frac{3}{5}$  and  $\theta$  is in Quadrant IV, then find  $\sec \theta = \frac{5}{4}$

Which quadrant would  $\theta$  terminate, given...

35.  $\sin \theta > 0$  and  $\cot \theta < 0$  **II**

36.  $\cos \theta < 0$  and  $\tan \theta > 0$  **III**

37. Find the reference angle for each of the following...

A.  $-310^\circ$   **$\theta_r = 50^\circ$**

B.  $264^\circ$   **$\theta_r = 84^\circ$**

C.  $\frac{10\pi}{7}$   **$\theta_r = \frac{3\pi}{7}$**

D.  $\frac{5\pi}{6}$   **$\theta_r = \frac{\pi}{6}$**

Give exact values for each of the following...

36.  $\sec 135^\circ = -\sqrt{2}$

37.  $\tan \pi = 0$

38.  $\tan \frac{4\pi}{3} = \sqrt{3}$

39.  $\sin(-90^\circ) = -1$

40.  $\csc 270^\circ = -1$

41.  $\cot \frac{7\pi}{6} = \sqrt{3}$

42.  $\cos \frac{3\pi}{2} = 0$

43.  $\sin 330^\circ = -\frac{1}{2}$