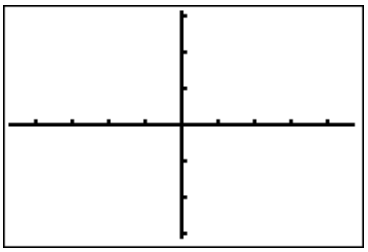
Pre-Calculus **Review Quiz #3** Name_____ Pd_____

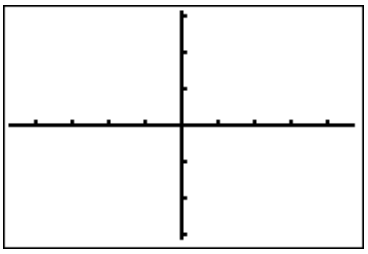
Chapter: 1-7, 2-1, 2-2, 2-3

Topic 1: Piecewise functions

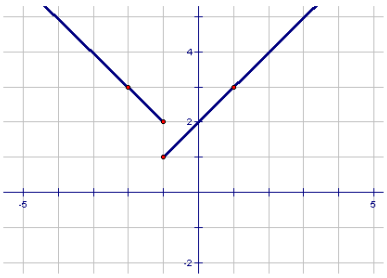
1. graph f(x) $f(x) = \begin{cases} 2x & if\ x < 0 \\ -x - 1 & if\ x \geq 0 \end{cases}$



2. graph g(x) $g(x) = \begin{cases} -x^2 & if\ x < -1 \\ x^2 - 2 & if\ -1 \leq x \leq 1 \\ -x^2 & if\ x > 1 \end{cases}$



3. State the piecewise function graphed below:



$f(x) = \begin{cases} \\ \\ \end{cases}$

Topic 2: Systems of Equations without a calculator (SHOW WORK)

4. solve by substitution

$y + x = 4$
$3y - 2x = -13$

5. solve by elimination

$5x - 2y = 20$
$3x + 8y = 12$

6. solve algebraically

$y - z = 2$
$x + y + z = 5$
$2x - 2y + 3z = -1$

Topic 3: Systems of equations using a calculator

7. $y - x = -2 - z$
   $3x + y = -14$
   $-x - 2y + 2z = 26$

8. $x + 10y = 7$
   $x + 5y - 3z = -3$
   $-2x + 15y - 15z = -40$

ACT/SAT Questions

9.

$$\begin{array}{r} \square 4 \\ \square 5 \\ \square 6 \\ +\square 7 \\ \hline 182 \end{array}$$

2. In the correctly worked addition problem above, each □ represents the same digit. What is the value of □?

(A) 2
(B) 3
(C) 4
(D) 5
(E) 6

10.

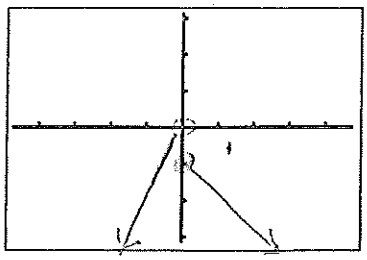
What is the greatest of three consecutive integers whose sum is 36?

(A) 10
(B) 11
(C) 12
(D) 13
(E) 14

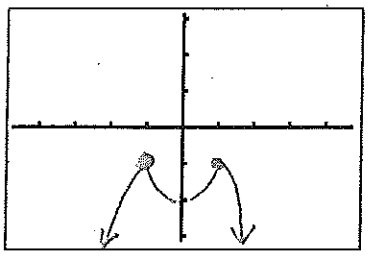
Pre-Calculus **Review Quiz #3** Name Key Pd____
Chapter: 1-7, 2-1, 2-2, 2-3

Topic 1: Piecewise functions

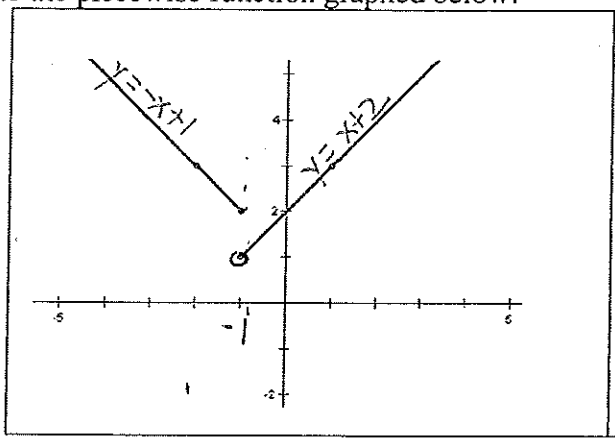
1. graph f(x) $f(x)=\begin{cases}2x & \text{if } x<0\\ -x-1 & \text{if } x\geq 0\end{cases}$ at $x<0$ $y=0$; at $x\geq 0$ $y=-1$



2. graph g(x) $g(x)=\begin{cases}-x^2 & \text{if } x<-1\\ x^2-.2 & \text{if } -1\leq x\leq 1\\ -x^2 & \text{if } x>1\end{cases}$ at -1 $y=-1$; at 1 $y=-1$; at 1 $y=-1$



3. State the piecewise function graphed below:



$f(x)=\begin{cases}-x+1 & x\leq -1\\ x+2 & x>-1\end{cases}$

Topic 2: Systems of Equations without a calculator (SHOW WORK)

4. solve by substitution

$y+x=4$
$3y-2x=-13$

$y=4-x$

$3(4-x)-2x=-13$
$12-3x-2x=-13$
$12-5x=-13$
$-5x=-25$
$x=5$

$y=4-5=-1$

$(5,-1)$

5. solve by elimination

$4[5x-2y=20]$
$3x+8y=12$

$20x-8y=80$
$3x+8y=12$

$\frac{23x}{23}=\frac{92}{23}$

$x=4$

$3(4)+8y=12$
$-12 \quad -12$
$8y=0$
$y=0$

$(4,0)$

6. solve algebraically

$y-z=2$
$x+y+z=5$
$2x-2y+3z=-1$

$y=2+z$

$x+(2+z)+z=5$
$2+x+2z=5$
$x+2z=3$

$y=2+1$
$y=3$

$2x-2(2+z)+3z=-1$
$2x-4-2z+3z=-1$
$2x-4+z=-1$
$2x+z=3$

$-2[x+2z=3]$
$2x+z=3$
$2x+1=3$
$2x=2$
$x=1$

$-2x+-4z=-6$
$2x+z=3$
$-3z=-3$
$z=1$

$(1,3,1)$

Topic 3: Systems of equations using a calculator

7. Solve for x, y, and z

$$-1 + y + 2 = 2y - x = -2 - z$$
$$3x + y = -14$$
$$-x - 2y + 2z = 26$$

$$\begin{bmatrix} -1 & 1 & 1 & -2 \\ 3 & 1 & 0 & -14 \\ -1 & -2 & 2 & 26 \end{bmatrix} \quad (-2, -8, 4)$$

8. Solve for x, y, and z

$$x + 10y = 7$$
$$x + 5y - 3z = -3$$
$$-2x + 15y - 15z = -40$$

$$\begin{bmatrix} 1 & 10 & 0 & 7 \\ 1 & 5 & -3 & -3 \\ -2 & 15 & -15 & -40 \end{bmatrix} \quad (3, 4, 2.\overline{6})$$

ACT/SAT Questions

$$\begin{array}{r} \square 4 \\ \square 5 \\ \square 6 \\ +\square 7 \\ \hline 182 \end{array}$$

2. In the correctly worked addition problem above, each □ represents the same digit. What is the value of □?

12
13
(14)
15
16

$$\begin{array}{r} 44 \\ 45 \\ 46 \\ 47 \\ \hline 182 \end{array}$$

What is the greatest of three consecutive integers whose sum is 36?

10
11
12
(13)
14

$11 + 12 + 13$ ↑

Notebook Check:

Homework Check:
