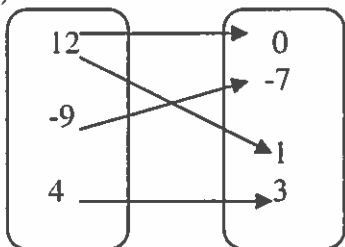


ALGEBRA II
REVIEW 1-1 & 1-2

Name KEY A# _____

For the following relations, list the domain & range, then state if the relation is a function and whether it is discrete or cont.

1)



$(12, 0)$ $(12, 1)$ $(-9, -7)$ $(4, 3)$
 $D: \{12, -9, 4\}$ No
 $R: \{0, -7, 1, 3\}$ Discrete

2) $\{(2,3), (3,2), (4,3), (5,2)\}$

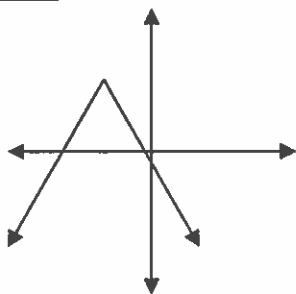
$D: \{2, 3, 4, 5\}$
 $R: \{2, 3\}$
 Yes, Discrete

3) $y = x^3$

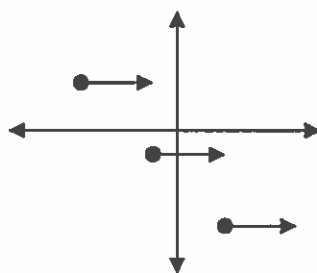
$D: \text{all real no.s}$
 $R: \text{all real no.s}$
 Yes, continuous

Use the vertical line test to determine if each graph represents a function (yes or no).

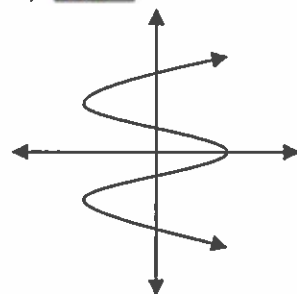
4) Y



5) N



6) N



Find each value for the following if $f(x) = \frac{2x+6}{-3}$ and $g(x) = x^2 - 3x$

7) $f(-3) = \underline{0}$

$$= \frac{2(-3)+6}{-3} = \frac{-6+6}{-3} = \frac{0}{-3}$$

8) $g(7) = \underline{28}$

$$= (7)^2 - 3(7) = 49 - 21$$

9) $f\left(\frac{3}{2}\right) = \underline{-3}$

$$= \frac{2(3/2)+6}{-3} = \frac{3+6}{-3} = \frac{9}{-3}$$

10) $g(-5) = \underline{40}$

$$= (-5)^2 - 3(-5) = 25 + 15$$

11) $g(3n) = \underline{9n^2 - 9n}$

$$= (3n)^2 - 3(3n) = 9n^2 - 9n$$

12) $f(a) = \underline{\frac{2a+6}{-3}}$

$$= \frac{2(a)+6}{-3} \text{ OR } = -\frac{2a}{3} - 2$$

If $h(x) = x^3 + 2x^2 - 1$, find each value.

13) $h(0) = \underline{-1}$

$$= 0^3 + 2(0)^2 - 1$$

14) $h\left(\frac{1}{2}\right) = \underline{-\frac{3}{8}}$

$$= \frac{1}{8} + \frac{1}{2} - 1$$

15) $h(-3) = \underline{-10}$

$$= -27 + 18 - 1$$

Determine whether each equation is linear (yes or no).

16) $y = x^2 - 2$ N

17) $3x + 2y - 4 = 0$ Y

18) $y = 10 + \frac{5}{x}$ N

19) $8x - 7\sqrt[3]{y} = 11$ N

20) $f(x) = \frac{2}{3}y - 5$ Y

21) $y^5 - x^5 = 1$ N

Re-write the following equations in standard form ($Ax + By = C$). Remember, the x-term must be positive and there can be no fractions in your answer.

22) $(8y - 4x = -7)(-1)$
 $4x - 8y = 7$

23) $y = 2x - 5$
 $\underline{-y} \quad \underline{+5}$
 $2x - y = 5$

24) $0 = 3y - 6x + 2$
 $\underline{-3y + 6x}$
 $6x - 3y = 2$

25) $\frac{10x - 9y}{-3} = -12$ (-3)
 $10x - 9y = 36$

26) $\frac{x}{4} + \frac{3y}{5} = \frac{7}{10}$ (2)
 $\frac{5x}{20} + \frac{12y}{20} = \frac{14}{20}$ $5x + 12y = 14$

Find the x & y-intercepts for each equation.

27) $4x + 5y = 40$
 $4x = 40 \quad 5y = 40$
 x-int = 10
 y-int = 8

28) $y = 7x + 2$
 $0 = 7x + 2 \quad y = 2$
 $-2 = 7x$
 x-int = $-\frac{2}{7}$
 y-int = 2

30) $\frac{-4x}{-4} = \frac{-24}{-4}$
 $x = 6$
 x-int = 6
 y-int = none

31) $2y - 21 = 3x$
 $-21 = 3x \quad 2y - 21 = 0$
 $2y = 21$
 x-int = -7
 y-int = $\frac{21}{2}$ or 10.5

32) $\frac{1}{2}x + 5y = 10$
 $\frac{1}{2}x = 10 \quad 5y = 10$
 x-int = 20
 y-int = 2

33) $\frac{y+2}{5} = -1$ (5)
 $y + 2 = -5$
 $y = -7$
 x-int = none
 y-int = -7