

**EXERCISE A**

Determine if the following equations or functions are linear. Write yes or no. If your answer is no, explain why.

1)  $x^2 + y^2 = 4$

2)  $h(x) = -2x + 11$

3)  $y = \frac{7}{6}x - \frac{1}{4}$

4)  $f(x) = 2 + 3\sqrt{x}$

5)  $g(x) = 1 - x - 3x^3$

6)  $\frac{9}{2x} + \frac{5}{y} = 8$

Write each equation in standard form. (**Ax + By = C**)

7)  $y = 3x - 5$

8)  $4x = 10y + 6$

9)  $y = \frac{2}{3}x + 1$

10)  $8.1 - x = 0.2y$

Find the x and y-intercepts for each equation.

11)  $y = -3x - 5$

12)  $x - y - 2 = 0$

13)  $8y - 5x = 20$

14)  $-11x = 55$

**EXERCISE B**

Determine if the following equations or functions are linear. Write yes or no. If your answer is no, explain your reasoning.

15)  $x + y = 5$

16)  $f(x) = 6x - 19$

17)  $f(x) = 7x^5 + x - 1$

18)  $h(x) = 2x^3 + 5$

19)  $g(x) = 10 + \frac{2}{x^2}$

20)  $\frac{x}{3} + \frac{y}{5} = -5$

21)  $x + y\sqrt{7} - 10$

22)  $y = \sqrt{2x - 5}$

Write each equation in standard form. (**Ax + By = C**)

23)  $y = -3x + 4$

24)  $y = 12x$

25)  $5y = 10x - 25$

26)  $.25 - 0.3x = y$

Find the x and y-intercepts for each equation.

27)  $2x - 6y = 12$

28)  $3x - 4y - 10 = 0$

29)  $y = x$

30)  $y = 4x - 2$

## EXERCISE C

31) Write the following equation in standard form.

$$\frac{5}{6}x + \frac{1}{15}y = \frac{3}{10}$$

32) Find the x and y-intercepts for the following equation.

$$-\frac{4}{3}y = 16$$

33) The temperature  $T$  in  $^{\circ}\text{F}$  above the earth's surface is given by the function:  $T(h) = -3.6h + 68$ , where  $h$  is the height in thousands of feet.

- Find the temperature at a height of 10,000 feet.
- Find the height if the temperature is  $-58^{\circ}\text{F}$ .



### ANSWERS:

1-6) see Mr. Paull for explanations

1) no

3) yes

5) no

7)  $3x - y = 5$

9)  $2x - 3y = -3$

11) x-int =  $-\frac{5}{3}$   
y-int =  $-5$

13) x-int =  $-4$   
y-int =  $\frac{5}{2}$

15-22) see Mr. Paull for explanations

15) yes

17) no

19) no

21) yes

23)  $3x + y = 4$

25)  $10x - 5y = 25$

27) x-int =  $6$

y-int =  $-2$

29) x-int =  $0$

y-int =  $0$

31)  $25x + 2y = 9$

33a)  $32^{\circ}\text{F}$

33b) 35,000 ft.