

# WORKSHEET # 8

\* Need ...

## LESSON # 7 Lines and Equations

### Unit # 1

Row # \_\_\_\_\_

Name \_\_\_\_\_

Period \_\_\_\_\_

- Find the slope of the line through
  - $(-1, 2)$  and  $(3, 4)$
  - $(5, 3)$  and  $(7, 1)$
  - $(4, \sqrt{2})$  and  $(-3, \sqrt{2})$
  - $(-2, -6)$  and  $(-2, 12)$ .
- Find the slopes of the sides of the triangle with vertices  $(-1, 2)$ ,  $(6, 5)$ , and  $(2, 7)$ .
- Use slopes to determine whether the given points lie on the same line.
  - $(1, 1)$ ,  $(-2, -5)$ , and  $(0, -1)$
  - $(-2, 4)$ ,  $(0, 2)$ , and  $(1, 5)$ .
- Draw the line through  $(4, 2)$  with slope
  - $m = 3$
  - $m = -2$
  - $m = -\frac{3}{4}$ .
- Draw the line through  $(-1, -2)$  with slope
  - $m = \frac{3}{5}$
  - $m = -1$
  - $m = \sqrt{2}$ .
- List the lines in parts (a)–(d) of Figure 1.4.19 in the order of decreasing slope.

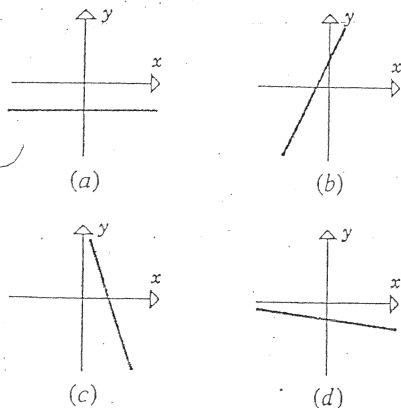


Figure 1.4.19

- List the lines in parts (a)–(d) of Figure 1.4.20 in the order of increasing slope.

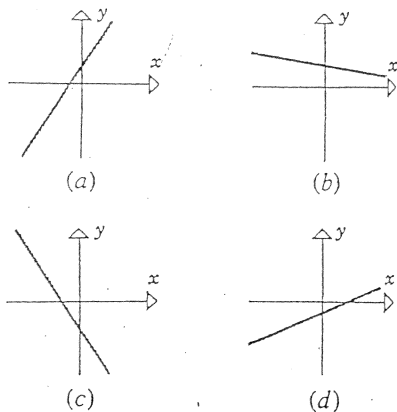


Figure 1.4.20

- Find the slope of the lines in parts (a) and (b) of Figure 1.4.21.

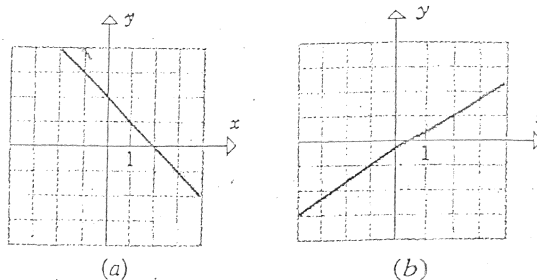


Figure 1.4.21

- Find the slope of the lines in parts (a) and (b) of Figure 1.4.22.

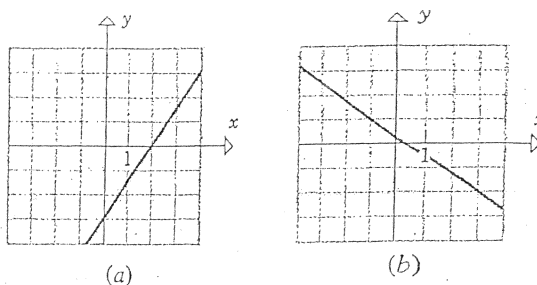


Figure 1.4.22

- A particle, initially at  $(7, 5)$ , moves along a line of slope  $m = -2$  to a new position  $(x, y)$ .
  - Find  $y$  if  $x = 9$ .
  - Find  $x$  if  $y = 12$ .
- A particle, initially at  $(1, 2)$ , moves along a line of slope  $m = 3$  to a new position  $(x, y)$ .
  - Find  $y$  if  $x = 5$ .
  - Find  $x$  if  $y = -2$ .
- Given that the point  $(k, 4)$  is on the line through  $(1, 5)$  and  $(2, -3)$ , find  $k$ .
- Let the point  $(3, k)$  lie on the line of slope  $m = 5$  through  $(-2, 4)$ ; find  $k$ .
- Find  $x$  and  $y$  if the line through  $(0, 0)$  and  $(x, y)$  has slope  $\frac{1}{2}$ , and the line through  $(x, y)$  and  $(7, 5)$  has slope 2.
- Find  $x$  if the slope of the line through  $(1, 2)$  and  $(x, 0)$  is the negative of the slope of the line through  $(4, 5)$  and  $(x, 0)$ .

In Exercises 16 and 17, find the slope of the line whose angle of inclination is given. (You should be able to solve these problems without a calculator.)

- $45^\circ$
  - $\frac{2\pi}{3}$
  - $30^\circ$ .
- $\frac{\pi}{6}$
  - $135^\circ$
  - $60^\circ$ .