

In Exercises 16–19 a point  $P$  on a line and the slope of the line are given. Sketch the line and find the coordinates of two other points on the line.

16.  $P(-2, 1)$ ; slope  $= \frac{1}{3}$

17.  $P(-3, 0)$ ; slope  $= \frac{2}{5}$

18.  $P(2, 4)$ ; slope  $= -\frac{3}{2}$

19.  $P(0, -5)$ ; slope  $= -\frac{1}{4}$

In Exercises 20 and 21 show that points  $P$ ,  $Q$ , and  $R$  are collinear by showing that  $\overline{PQ}$  and  $\overline{QR}$  have the same slope.

20.  $P(-1, 3)$   $Q(2, 7)$   $R(8, 15)$

21.  $P(-8, 6)$   $Q(-5, 5)$   $R(4, 2)$

- B** 22. A wheelchair ramp is to be built at the town library. If the entrance to the library is 18 in. above ground, and the slope of the ramp is  $\frac{1}{15}$ , how far out from the building will the ramp start?



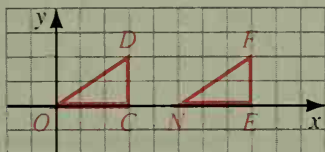
Complete.

23. A line with slope  $\frac{3}{4}$  passes through points  $(2, 3)$  and  $(10, \underline{\quad})$ .

24. A line with slope  $-\frac{5}{2}$  passes through points  $(7, -4)$  and  $(\underline{\quad}, 6)$ .

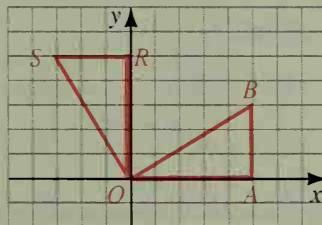
25. A line with slope  $m$  passes through points  $(p, q)$  and  $(r, \underline{\quad})$ .

26. a. Find the slopes of  $\overline{OD}$  and  $\overline{NF}$ .  
b. Why is  $\triangle OCD \cong \triangle NEF$ ?  
c. Why is  $\angle DOC \cong \angle FNE$ ?  
d. Why is  $\overline{OD} \parallel \overline{NF}$ ?  
e. What do you think is true about the slopes of parallel lines?



Ex. 26

27. a. Show that  $\triangle OAB \cong \triangle ORS$ .  
b. Why is  $\overline{OB} \perp \overline{OS}$ ?  
c. Find the product of the slopes of  $\overline{OB}$  and  $\overline{OS}$ .



Ex. 27

In Exercises 28 and 29, (a) find the lengths of the sides of  $\triangle RST$ , (b) use the converse of the Pythagorean Theorem to show that  $\triangle RST$  is a right triangle, and (c) find the product of the slopes of  $\overline{RT}$  and  $\overline{ST}$ .

28.  $R(4, 2)$ ,  $S(-1, 7)$ ,  $T(1, 1)$

29.  $R(4, 3)$ ,  $S(-3, 6)$ ,  $T(2, 1)$