Rate Word Problems

1. A copy machine makes copies at a constant rate. The machine can make 80 copies in $2\frac{1}{2}$ minutes.

a) Write an equation to represent the number of copies, n, that can be made over any time interval in minutes, t.
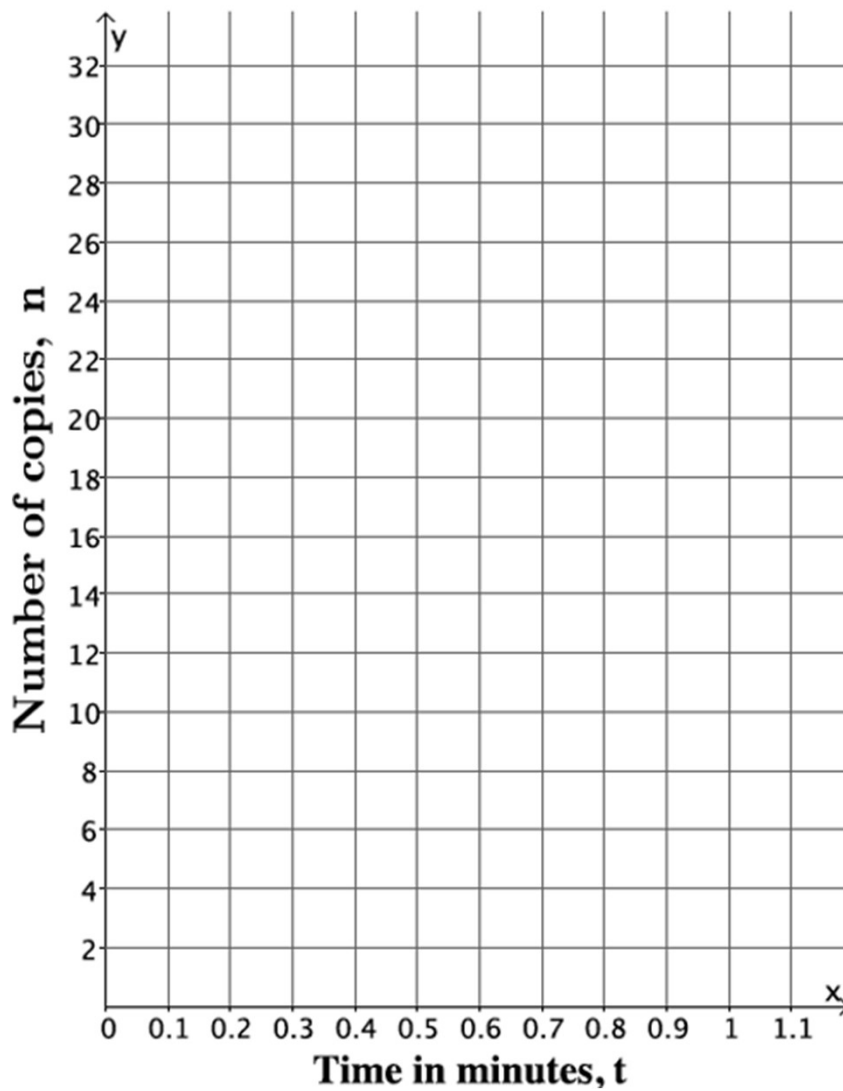
b) Complete the table below.

t (time in minutes)	Linear Equation:	n (number of copies)
0		
0.25		
0.5		
0.75		
1		

Rate Word Problems

c) Graph the data on a coordinate plane.

d) The copy machine runs for 20 seconds and then jams. About how many copies were made before the jam occurred? Explain.

Rate Word Problems

1. A copy machine makes copies at a constant rate. The machine can make 80 copies in $2\frac{1}{2}$ minutes.

a) Write an equation to represent the number of copies, n, that can be made over any time interval in minutes, t.

Let C be the constant rate that copies can be made in copies per minute. Then,

$\frac{80}{2\frac{1}{2}} = C$, and $\frac{n}{t} = C$; therefore, $\frac{80}{2\frac{1}{2}} = \frac{n}{t}$.

$$\frac{80}{2\frac{1}{2}} = \frac{n}{t}$$

$$2\frac{1}{2}n = 80t$$

$$\frac{5}{2}n = 80t$$
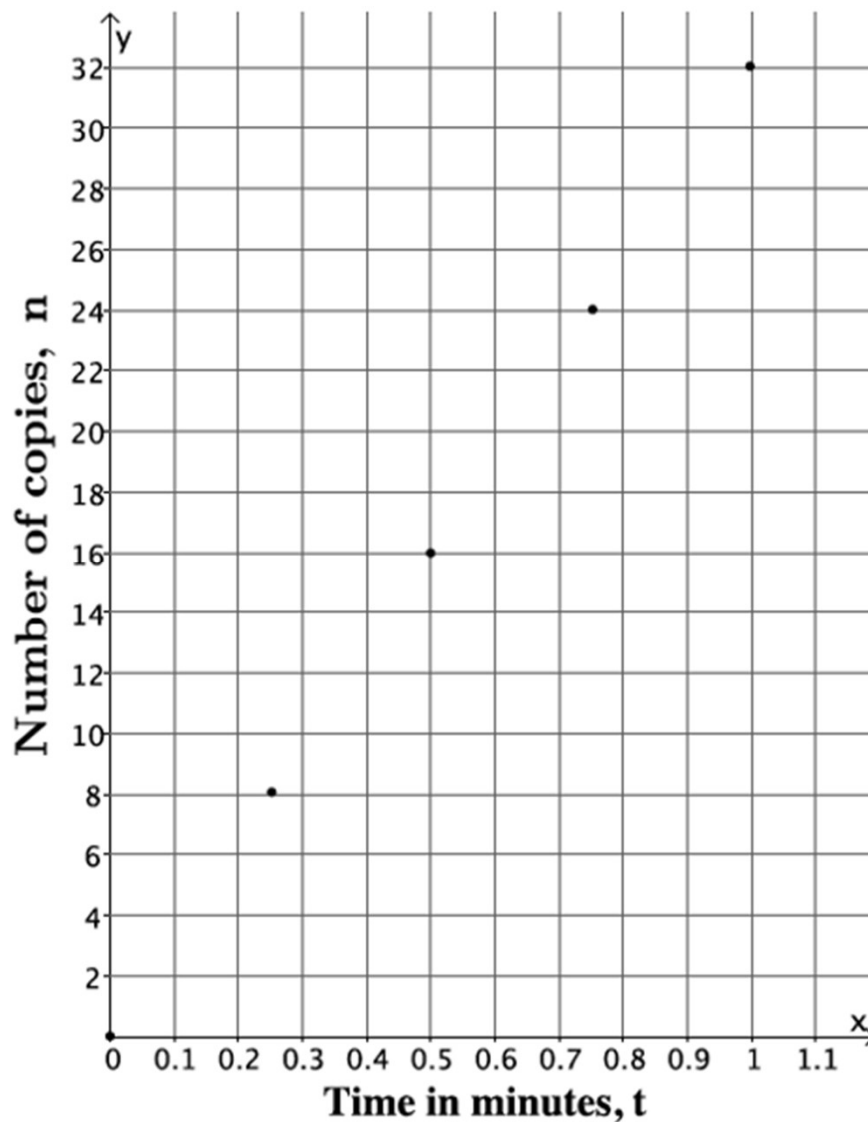
$$\frac{2}{5} \cdot \frac{5}{2}n = \frac{2}{5} \cdot 80t$$

$$n = 32t$$

b) Complete the table below.

t (time in minutes)	Linear Equation: $n = 32t$	n (number of copies)
0	$n = 32(0)$	0
0.25	$n = 32(0.25)$	8
0.5	$n = 32(0.5)$	16
0.75	$n = 32(0.75)$	24
1	$n = 32(1)$	32

Go to onlinemathlearning.com for more free math resources

Rate Word Problems

c) Graph the data on a coordinate plane.

d) The copy machine runs for 20 seconds and then jams. About how many copies were made before the jam occurred? Explain.

Since 20 seconds is approximately 0.3 of a minute, then the number of copies made will be between 8 and 16 because 0.3 is between 0.25 and 0.**5**.

Go to onlinemathlearning.com for more free math resources