Homework #78   **Answers**

**From Houghton-Mifflin Precalculus**   **3rd Edition**

P736-737:

14) $x = 3 - 2t$, $y = 2 + 3t$

t	x	y
-4	11	-10
-3	9	-7
-2	7	-4
-1	5	-1
0	3	2
1	1	5
2	-1	8
3	-3	11
4	-5	14

15) $x = (1/4)t$, $y = t^2$

t	x	y
-4	-1	16
-3	-$\frac{3}{4}$	9
-2	-$\frac{1}{2}$	4
-1	-$\frac{1}{4}$	1
0	0	0
1	$\frac{1}{4}$	1
2	$\frac{1}{2}$	4
3	$\frac{3}{4}$	9
4	1	16

18) $x = \sqrt{t}$, $y = 1 - t$

t	x	y
-4	--	5
-3	--	4
-2	--	3
-1	--	2
0	0	1
1	1	0
2	$\sqrt{2}$	-1
3	$\sqrt{3}$	-2
4	2	-3
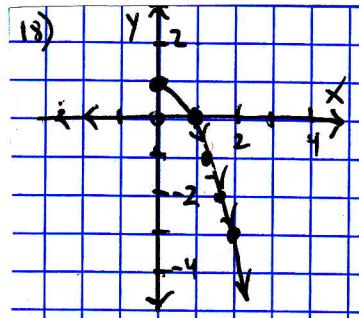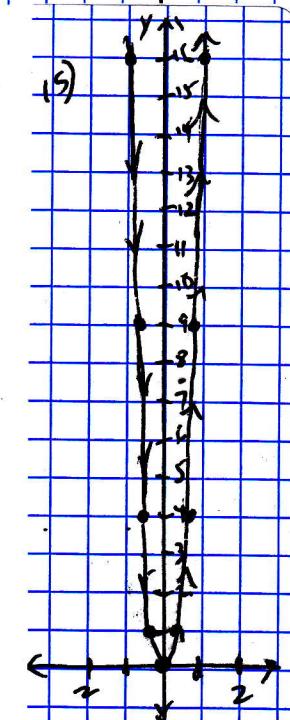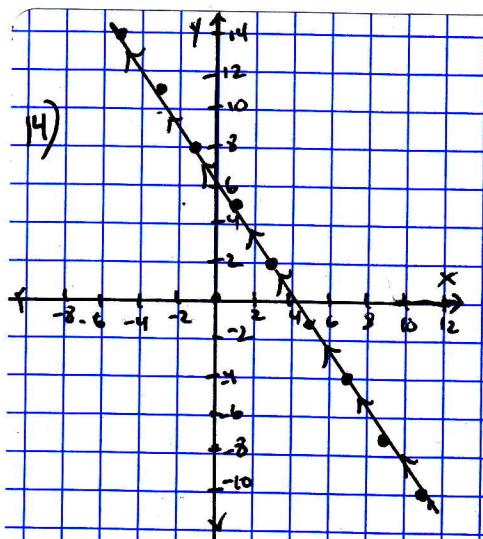
20) $x = |t - 1|$, $y = t + 2$

t	x	y
-4	5	-2
-3	4	-1
-2	3	0
-1	2	1
0	1	2
1	0	3
2	1	4
3	2	5
4	3	6
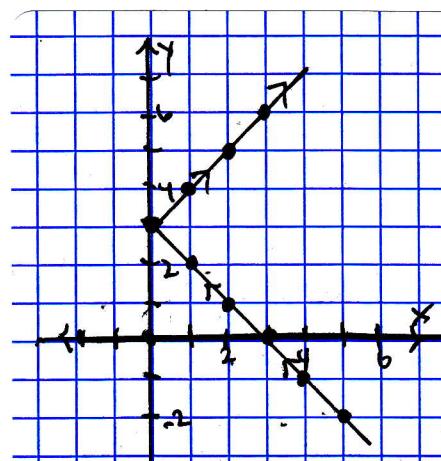
21) $x = 3 \cos \theta$, $y = 3 \sin \theta$

θ	x	y
0	3	0
π/6	2.6	1.5
π/4	2.1	2.1
π/3	1.5	2.6
π/2	0	3
2π/3	-1.5	2.6
3π/4	-2.1	2.1
5π/6	-2.6	1.5
π	-3	0
7π/6	-2.6	-1.5
5π/4	-2.1	-2.1
4π/3	-1.5	-2.6
3π/2	0	-3
5π/3	1.5	-2.6
7π/4	2.1	-2.1
11π/6	2.6	-1.5
2π	3	0
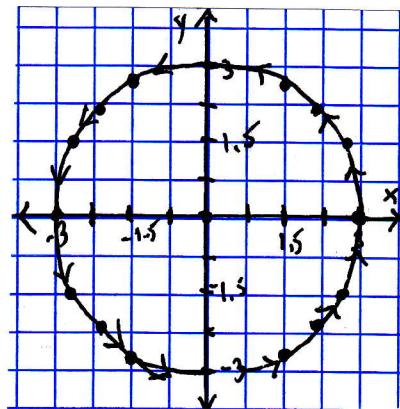
35) All the graphs result in a line with a y-intercept of 1 and a slope of 2. What differs is the domain.

a) $x = t$ and $y = 2t + 1$ has an unrestricted domain.

b) $x = \cos \theta$ and $y = 2 \cos \theta + 1$ has a domain $-1 \leq x \leq 1$.

c) $x = e^{-t}$ and $y = 2e^{-t} + 1$ has a domain $x \geq 0$.

d) $x = e^{t}$ and $y = 2e^{t} + 1$ has a domain $x \geq 0$ as well.