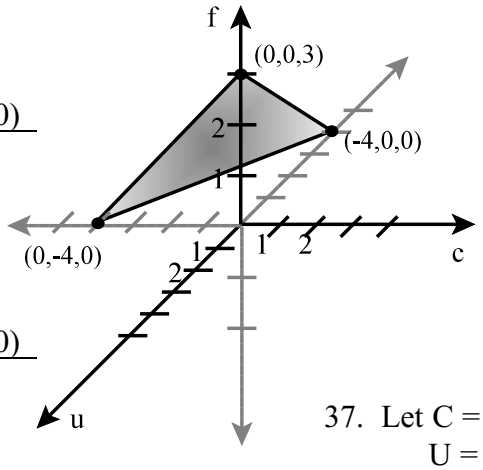
8.5"x11" exam (#'s 1-18 and 35-40)

Multiple Choice (#'s 1 to 18)

1.b 2.a 3.b 4.b 5.d 6.d 7.b 8.c 9.b 10.c 11.a 12.a 13.d 14.d
15.b 16.c 17.a 18.c

Long answer(#'s 35 to 40)

35. $-3u - 3c + 4f = 12$



"u" intercept($c = 0$, $f = 0$)

$-3u - 3(0) + 4(0) = 12$

$-3u = 12$

$u = -4$

pt. (-4 , 0 , 0)

"c" intercept($u = 0$, $f = 0$)

$-3(0) - 3c + 4(0) = 12$

$-3c = 12$

$c = -4$

pt. (0 , -4 , 0)

"f" intercept($u = 0$, $c = 0$)

$-3(0) - 3(0) + 4f = 12$

$4f = 12$

$f = 3$

pt. (0 , 0 , 3)

36. $\begin{pmatrix} 3 & 4 \\ 2 & 2 \end{pmatrix} \rightarrow \det. = (3)(2) - (4)(2) = -2$

$$\begin{pmatrix} 3 & 4 \\ 2 & 2 \end{pmatrix}^{-1} = \begin{pmatrix} \frac{2}{-2} & \frac{-4}{-2} \\ \frac{-2}{-2} & \frac{3}{-2} \end{pmatrix} = \begin{pmatrix} -1 & 2 \\ 1 & -3/2 \end{pmatrix}$$

37. Let C = cost per minuet for a call in Canada
U = cost per minuet for a call in U.S.
S = cost per minuet for a call over seas

System: $25C + 15U + 18S = 10.74$
$20C + 24U + 15S = 10.92$
$35C + 30U + 35S = 19.40$

Solutions: C = \$0.12 U = \$0.18 S = \$0.28

38. Solution (2, -3) {to many possible ways to show}

39. $2(y + 1) = \sin(x + 45^o)$

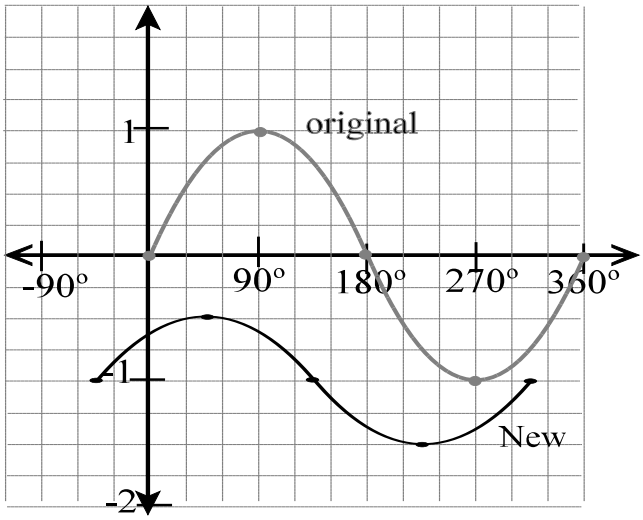
Map. Rule: $(x, y) \rightarrow \left(x - 45^o, \frac{1}{2}y - 1\right)$

Original table

x	y
0	0
90	1
180	0
270	-1
360	0

New Table

x	y
-45	-1
45	-1/2
135	-1
225	-3/2
315	-1



40. (As a cosine curve from -45° to 225° NOTE: there are many other solutions)

H.S.(p) = $270^o \rightarrow \frac{270^o}{360^o} = \frac{3}{4}$

H.T.(h) = -45°

V.S.(a) = 3

V.T.(s) = 1

Map. Rule: $(x, y) \rightarrow \left(\frac{3}{4}x - 45^o, 3y + 1\right)$

Equation: $\frac{1}{3}(y - 1) = \cos\frac{4}{3}(x + 45^o)$