Making Frozen Custard

Asked to find how many eggs, cream, & milk bakery needs for week days, week ends, holidays

	light custard	rich custard
eggs	1.5	2
cream	2.5	5
milk	5.5	3

	week day	week end	holiday
light custard	6	6	8
rich custard	10	12	15

	week day	week end	holiday
eggs	$(1.5)(6) + 2(10)$ = 29	$(1.5)6 + 2(12)$ = 33	$1.5(8) + 2(15)$ = 42
cream	$2.5(6) + 5(10)$ = 65	$2.5(6) + 5(12)$ = 75	$2.5(8) + 5(15)$ = 95
milk	$5.5(6) + 3(10)$ = 63	$5.5(6) + 3(12)$ = 69	$5.5(8) + 3(15)$ = 89

2019-20

Making Profit on Pie

	Apple Pie	Cherry Pie	Blue-berry pie
Price	$3	$4	$2

	Mon.	Tues.	Wed.
Apple	13	9	7
Cherry	8	7	4
Blueberry	6	4	0

	Mon.	Tues.	Wed.
Profit	$83	$63	$37

$3(13) + 4(8) + 2(6)$

$3(9) + 4(7) + 2(4)$

$3(7) + 4(4) + 2(0)$

Calculating Total Points at Meet

	First Place	Second Place	Third Place
KHS	4	7	3
WHS	2	8	1
YHS	1	8	4

	Points
First Place	15
Second Place	10
Third Place	5

	Total Points	
KHS	145	← 4(15) + 7(10) + 3(5)
WHS	115	← 2(15) + 8(10) + 1(5)
YHS	115	← 1(15) + 8(10) + 4(5)

Process of Multiplying matrices:

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix}\begin{bmatrix} e & f & g \\ h & i & j \end{bmatrix} = \begin{bmatrix} ae+bh & af+bi & ag+bj \\ ce+dh & cf+di & cg+dj \end{bmatrix}$$

Use the given matrices and perform the indicated operations, if possible:

$$A = \begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix} \qquad B = \begin{bmatrix} -3 & -4 & -5 \\ -1 & -2 & -3 \end{bmatrix} \qquad C = \begin{bmatrix} 6 & 8 & 10 \\ 10 & 4 & 2 \\ -3 & 0 & 5 \end{bmatrix} \qquad D = \begin{bmatrix} 3 & 6 \\ 9 & 12 \end{bmatrix}$$

1. AB

$(2\times2)(2\times3) = 2\times3$

$$= \begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix}\begin{bmatrix} -3 & -4 & -5 \\ -1 & -2 & -3 \end{bmatrix}$$

$$= \begin{bmatrix} 3(-3)+4(-1) & 3(-4)+4(-2) & 3(-5)+4(-3) \\ 5(-3)+6(-1) & 5(-4)+6(-2) & 5(-5)+6(-3) \end{bmatrix}$$

$$= \begin{bmatrix} -13 & -20 & -27 \\ -21 & -32 & -43 \end{bmatrix}$$

2. DA

$(2\times2)(2\times2) = 2\times2$

$$= \begin{bmatrix} 3 & 6 \\ 9 & 12 \end{bmatrix}\begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix}$$

$$= \begin{bmatrix} 9+30 & 12+36 \\ 27+60 & 36+72 \end{bmatrix}$$

$$= \begin{bmatrix} 39 & 48 \\ 87 & 108 \end{bmatrix}$$

3. BD

$(2\times3)(2\times2)$

$$= \begin{bmatrix} -3 & -4 & -5 \\ -1 & -2 & -3 \end{bmatrix}\begin{bmatrix} 3 & 6 \\ 9 & 12 \end{bmatrix}$$

$$= \begin{bmatrix} -3(3)+(-4)(9)+(-5) & \_ \\ & \end{bmatrix}$$

Can't multiply

No Solution

What observations can you make about multiplying matrices?

row of 1st * column of 2nd (multiply elements and add products together)

$(r_1 \times c_1) * (r_2 \times c_2) = (r_1 \times c_2)$

need to be the same