

## 2006 Senior Problem

Which of the following lambs has the highest adjusted 60-day weaning weight? Calculate adjusted 60-day weaning weights for the following lambs. Lambs were weighed on April 20.

Ear tag	Sex	Date born	Birth weight (lbs.)	Type of birth	Type of rearing	Age of dam (years)	Age at weaning (days)	Actual weight (lbs.)
1	Ram	2/14/06	10.0	1	1	4	65	80.0
2	Ewe	2/01/06	8.0	2	2	1	78	65.0
3	Ewe	2/07/06	7.0	3	3	6	72	56.0

1=single, 2=twin, 3=triplet

Multiplicative adjustment factors to correct for effects of sex, age of dam, and type of birth and rearing on lamb weaning weights.								
Sex of lamb	Age of dam	Type of birth and rearing						
		1,1	1,2	2,1	2,2	3,1	3,2	3,3
Ewe	1	1.14	1.30	1.27	1.37	1.36	1.46	1.56
	2	1.06	1.21	1.18	1.27	1.26	1.36	1.45
	3-6	1.00	1.14	1.11	1.20	1.29	1.28	1.37
	>6	1.04	1.19	1.15	1.25	1.24	1.33	1.42
Ram	1	1.04	1.18	1.15	1.24	1.23	1.33	1.42
	2	0.96	1.10	1.07	1.16	1.15	1.23	1.32
	3-6	0.91	1.04	1.01	1.09	1.08	1.16	1.25
	>6	0.95	1.08	1.05	1.14	1.13	1.21	1.30
Wether	1	1.11	1.26	1.23	1.33	1.32	1.42	1.51
	2	1.03	1.21	1.14	1.23	1.22	1.32	1.41
	3-6	0.97	1.11	1.08	1.16	1.15	1.24	1.33
	>6	1.01	1.15	1.12	1.21	1.20	1.29	1.38

## Step 1

Adjust weights for a common age (60 days) by determining ADG and multiplying by 60 (don't forget to add birth weight back in)

$$\text{ADG} = [\text{Actual weight} - \text{birth weight}] / \text{Age in days}$$

### ADG calculation

$$\#1 \quad [80-10] / 65 = 1.08 \text{ lbs. per day}$$

$$\#2 \quad [65-8] / 78 = 0.73 \text{ lbs. per day}$$

$$\#3 \quad [56-7] / 72 = 0.68 \text{ lbs. per day}$$

$$\text{60-day weight} = [\text{ADG} \times 60] + \text{birth weight}$$

### 60-day weight calculation

$$\#1 \quad [60 \text{ days} \times 1.08] = 64.8 \text{ lbs.} + 10.0 = 74.8 \text{ lbs.}$$

$$\#2 \quad [60 \text{ days} \times 0.73] = 43.8 \text{ lbs.} + 8.0 = 51.8 \text{ lbs.}$$

$$\#3 \quad [60 \text{ days} \times 0.68] = 40.8 \text{ lbs.} + 7.0 = 47.8 \text{ lbs.}$$

## Step 2

Adjust weight for sex, age, and type of birth and rearing by multiplying 60-day corrected weight by adjustment factor from table.

$$\#1 \quad 74.8 \times 0.91 = 68.1 \text{ lbs.}$$

$$\#2 \quad 51.8 \times 1.37 = 71.0 \text{ lbs.}$$

$$\#3 \quad 47.8 \times 1.37 = 65.5 \text{ lbs.}$$

There may be some differences due to rounding.

**Lamb #2 had the highest adjusted weaning weight (71.0 lbs)**