

(1)

Prices Given 2 U

Price of wheat	3.00 \$ / bushel	
Price of nitrogen	0.10 \$ / lb	
Fixed Costs	50.00 \$ / acre	
Other Variable Costs	60.00 \$ / acre	
Externality	0.00 \$ / lb N	is negative if externality is a cost; is positive if externality is a benefit

Private benefits (profits to farmer)

Produce wheat?	Nitrogen (lbs / acre)	Wheat yield (bushels / acre)	Cost of nitrogen application (\$ / acre)	Total fixed costs (\$ / acre)	Total variable costs (\$ / acre)	Total private costs (\$ / acre)	Revenues (\$ / acre)	Private profits (\$ / acre)
NO	0.00	0.00	\$ -	\$ 50.00	\$ -	\$ 50.00	\$ -	\$ (50.00)
Yes	0.00	23.00	\$ -	\$ 50.00	\$ 60.00	\$ 110.00	\$ 69.00	\$ (41.00)
Yes	10.00	25.00	\$ 1.00	\$ 50.00	\$ 61.00	\$ 111.00	\$ 75.00	\$ (36.00)
Yes	20.00	30.50	\$ 2.00	\$ 50.00	\$ 62.00	\$ 112.00	\$ 91.50	\$ (20.50)
Yes	30.00	40.00	\$ 3.00	\$ 50.00	\$ 63.00	\$ 113.00	\$ 120.00	\$ 7.00
Yes	40.00	55.00	\$ 4.00	\$ 50.00	\$ 64.00	\$ 114.00	\$ 165.00	\$ 51.00
Yes	50.00	45.20	\$ 5.00	\$ 50.00	\$ 65.00	\$ 115.00	\$ 135.60	\$ 20.60
Yes	60.00	45.15	\$ 6.00	\$ 50.00	\$ 66.00	\$ 116.00	\$ 135.45	\$ 19.45

Produce wheat?	Nitrogen	Wheat yield	Average variable costs	Average total costs	Average Revenue	Profits
NO	-----	-----	-----	-----	-----	
YES	0					
YES	10					
YES	20					
YES	30					
YES	40					
YES	50					
YES	60					

(2)

Prices Given 2 U

Price of wheat	3.00	\$/ bushel						
Price of nitrogen	5.00	\$/ lb						
Fixed Costs	50.00	\$/ acre						
Other Variable Costs	60.00	\$/ acre						
Externality	0.00	\$/ lb N	is negative if externality is a cost; is positive if externality is a benefit					

Private benefits (profits to farmer)

Produce wheat?	Nitrogen (lbs / acre)	Wheat yield (bushels / acre)	Cost of nitrogen application (\$ / acre)	Total fixed costs (\$ / acre)	Total variable costs (\$ / acre)	Total private costs (\$ / acre)	Revenues (\$ / acre)	Private profits (\$ / acre)
NO	0.00	0.00	\$ -	\$ 50.00	\$ -	\$ 50.00	\$ -	\$ (50.00)
Yes	0.00	23.00	\$ -	\$ 50.00	\$ 60.00	\$ 110.00	\$ 69.00	\$ (41.00)
Yes	10.00	25.00	\$ 50.00	\$ 50.00	\$ 110.00	\$ 160.00	\$ 75.00	\$ (85.00)
Yes	20.00	30.50	\$ 100.00	\$ 50.00	\$ 160.00	\$ 210.00	\$ 91.50	\$ (118.50)
Yes	30.00	33.00	\$ 150.00	\$ 50.00	\$ 210.00	\$ 260.00	\$ 99.00	\$ (161.00)
Yes	40.00	35.00	\$ 200.00	\$ 50.00	\$ 260.00	\$ 310.00	\$ 105.00	\$ (205.00)
Yes	50.00	36.00	\$ 250.00	\$ 50.00	\$ 310.00	\$ 360.00	\$ 108.00	\$ (252.00)
Yes	60.00	36.20	\$ 300.00	\$ 50.00	\$ 360.00	\$ 410.00	\$ 108.60	\$ (301.40)

Produce wheat?	Nitrogen	Wheat yield	Average variable costs	Average total costs	Average Revenue	Profits
NO	-----	-----	-----	-----	-----	
YES	0					
YES	10					
YES	20					
YES	30					
YES	40					
YES	50					
YES	60					

(3)

Prices Given 2 U

Price of w	3.00	\$ / bushel
Price of n	0.10	\$ / lb
Fixed Cost	50000.00	\$ / acre
Other Var	60.00	\$ / acre
Externalit	0.00	\$ / lb N

ridiculously high FC

is negative if externality is a cost; is positive if externality is a benefit

Private benefits (profits to farmer)

Produce wheat?	Nitrogen (lbs / acre)	Wheat yield (bushels / acre)	Cost of nitrogen application (\$ / acre)	Total fixed costs (\$ / acre)	Total variable costs (\$ / acre)	Total private costs (\$ / acre)	Revenue (\$ / acre)	Private profits (\$ / acre)
NO	0.00	0.00	\$ -	\$ 50,000.00	\$ -	\$ 50,000.00	\$ -	\$ (50,000.00)
Yes	0.00	23.00	\$ -	\$ 50,000.00	\$ 60.00	\$ 50,060.00	\$ 69.00	\$ (49,991.00)
Yes	10.00	25.00	\$ 1.00	\$ 50,000.00	\$ 61.00	\$ 50,061.00	\$ 75.00	\$ (49,986.00)
Yes	20.00	30.50	\$ 2.00	\$ 50,000.00	\$ 62.00	\$ 50,062.00	\$ 91.50	\$ (49,970.50)
Yes	30.00	40.00	\$ 3.00	\$ 50,000.00	\$ 63.00	\$ 50,063.00	\$ 120.00	\$ (49,943.00)
Yes	40.00	45.00	\$ 4.00	\$ 50,000.00	\$ 64.00	\$ 50,064.00	\$ 135.00	\$ (49,929.00)
Yes	50.00	47.00	\$ 5.00	\$ 50,000.00	\$ 65.00	\$ 50,065.00	\$ 141.00	\$ (49,924.00)
Yes	60.00	43.00	\$ 6.00	\$ 50,000.00	\$ 66.00	\$ 50,066.00	\$ 129.00	\$ (49,937.00)

Produce wheat?	Nitrogen	Wheat yield	Average variable costs	Average total costs	Average Revenue	Profits
NO	-----	-----	-----	-----	-----	
YES	0					
YES	10					
YES	20					
YES	30					
YES	40					
YES	50					
YES	60					

(4)

Prices Given 2 U

Price of w	4.00	\$/ bushel	higher wheat price
Price of ni	0.50	\$/ lb	
Fixed Cost	50.00	\$/ acre	higher N price
Other Var	60.00	\$/ acre	
Externalit	0.00	\$/ lb N	

is negative if externality is a cost; is positive if externality is a b

Private benefits (profits to farmer)

Produce wheat?	Nitrogen (lbs / acre)	Wheat yield (bushels / acre)	Cost of nitrogen application (\$ / acre)	Total fixed costs (\$ / acre)	Total variable costs (\$ / acre)	Total private costs (\$ / acre)	Revenue (\$ / acre)	Private profits (\$ / acre)
NO	0.00	0.00	\$ -	\$ 50.00	\$ -	\$ 50.00	\$ -	\$ (50.00)
Yes	0.00	23.00	\$ -	\$ 50.00	\$ 60.00	\$ 110.00	\$ 92.00	\$ (18.00)
Yes	10.00	25.00	\$ 5.00	\$ 50.00	\$ 65.00	\$ 115.00	\$ 100.00	\$ (15.00)
Yes	20.00	30.50	\$ 10.00	\$ 50.00	\$ 70.00	\$ 120.00	\$ 122.00	\$ 2.00
Yes	30.00	33.00	\$ 15.00	\$ 50.00	\$ 75.00	\$ 125.00	\$ 132.00	\$ 7.00
Yes	40.00	35.00	\$ 20.00	\$ 50.00	\$ 80.00	\$ 130.00	\$ 140.00	\$ 10.00
Yes	50.00	36.00	\$ 25.00	\$ 50.00	\$ 85.00	\$ 135.00	\$ 144.00	\$ 9.00
Yes	60.00	36.20	\$ 30.00	\$ 50.00	\$ 90.00	\$ 140.00	\$ 144.80	\$ 4.80

Produce wheat?	Nitrogen	Wheat yield	Average variable costs	Average total costs	Average Revenue	Profits
NO	-----	-----	-----	-----	-----	
YES	0					
YES	10					
YES	20					
YES	30					
YES	40					
YES	50					
YES	60					

(5)

Prices Given 2 U

Price of w	2.00	\$/ bushel	low wheat price
Price of n	2.00	\$/ lb	
Fixed Cos	50.00	\$/ acre	huge N price
Other Var	60.00	\$/ acre	
Externalit	0.00	\$/ lb N	is negative if externality is a cost; is positive if externality is a be

Private benefits (profits to farmer)

Produce wheat?	Nitrogen (lbs / acre)	Wheat yield (bushels / acre)	Cost of nitrogen application (\$ / acre)	Total fixed costs (\$ / acre)	Total variable costs (\$ / acre)	Total private costs (\$ / acre)	Revenue (\$ / acre)	Private profits (\$ / acre)
NO	0.00	0.00	\$ -	\$ 50.00	\$ -	\$ 50.00	\$ -	\$ (50.00)
Yes	0.00	23.00	\$ -	\$ 50.00	\$ 60.00	\$ 110.00	\$ 46.00	\$ (64.00)
Yes	10.00	25.00	\$ 20.00	\$ 50.00	\$ 80.00	\$ 130.00	\$ 50.00	\$ (80.00)
Yes	20.00	30.50	\$ 40.00	\$ 50.00	\$ 100.00	\$ 150.00	\$ 61.00	\$ (89.00)
Yes	30.00	40.00	\$ 60.00	\$ 50.00	\$ 120.00	\$ 170.00	\$ 80.00	\$ (90.00)
Yes	40.00	45.00	\$ 80.00	\$ 50.00	\$ 140.00	\$ 190.00	\$ 90.00	\$ (100.00)
Yes	50.00	47.00	\$ 100.00	\$ 50.00	\$ 160.00	\$ 210.00	\$ 94.00	\$ (116.00)
Yes	60.00	43.00	\$ 120.00	\$ 50.00	\$ 180.00	\$ 230.00	\$ 86.00	\$ (144.00)

Produce wheat?	Nitrogen	Wheat yield	Average variable costs	Average total costs	Average Revenue	Profits
NO	-----	-----	-----	-----	-----	
YES	0					
YES	10					
YES	20					
YES	30					
YES	40					
YES	50					
YES	60					

