

EX 2 - 1

WACC =	25% a
Kd =	18% a
T =	33%

**SHORTPROY**

MOMENTO	(años)	0	1	2	3
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depreciación					
VALOR INICIAL	(MM\$)		1000	800	600
DEPRECIACIÓN	(MM\$)		200	200	200
VALOR FINAL	(MM\$)	1,000	800	600	400

préstamo					
SALDO INICIAL	(MM\$)		0	0	0
INTERESES	(MM\$)		0	0	0
AMORTIZACIÓN	(MM\$)		0	0	0
SALDO FINAL	(MM\$)	0	0	0	0

INVERSIÓN					
INV EQUIPO	(MM\$)	1,000			-400
KT NECESARIO	(MM\$)	200	300	450	0
INV KT	(MM\$)	200	100	150	-450
TOTAL INV	(MM\$)	1,200	100	150	-850
FF INV	(MM\$)	-1,200	-100	-150	850

OPERACIÓN					
UT OPERATIVA	(MM\$)		600	900	1350
INTERESES	(MM\$)		0	0	0
UT GRAVABLE	(MM\$)		600	900	1,350
IMPUESTOS	(MM\$)		198	297	446
UT NETA	(MM\$)		402	603	905
AMORTIZACIÓN	(MM\$)		0	0	0
DEPRECIACIÓN	(MM\$)		200	200	200
FF OPER	(MM\$)		602	803	1,105

FFN	(MM\$)	-1,200	502	653	1,955
WACC	(%a)	25%			
VPN	(MM\$)	620			
TIR	(%a)	50.23%			

**MEJOR ALTERNATIVA**

**LONGTPROY**

INVERSIÓN	(MM\$)	-1,200
FFN	(MM\$)	235
J	(%a)	5%
N	(años)	infinito

WACC	(%a)	25%
VPN	(MM\$)	-25
TIR	(%a)	25.56%

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**EX 2 - 1**

WACC = 0.25 a  
Kd = 0.18 a  
T = 0.33

**SHORTPROY**

MOMENTO	(años)	0	1	2	3
<b>depreciación</b>					
VALOR INICIAL (MMS)			=+D16	=+E16	=+F16
DEPRECIACIÓN (MMS)			=+\$D\$16*(1/5)	=+\$D\$16*(1/5)	=+\$D\$16*(1/5)
VALOR FINAL (MMS)	=+D25		=+E14-E15	=+F14-F15	=+G14-G15
<b>préstamo</b>					
SALDO INICIAL (MMS)			=+D22	=+E22	=+F19
INTERESES (MMS)			=+\$C\$6*E19	=+\$C\$6*F19	=+\$C\$6*G19
AMORTIZACIÓN (MMS)			0	0	0
SALDO FINAL (MMS)	0		=+E19-E21	=+F19-F21	=+G19-G21
<b>INVERSIÓN</b>					
INV EQUIPO (MMS)	1000				=-G16
KT NECESARIO (MMS)	200		=+D26*1.5	=+E26*1.5	0
INV KT (MMS)	200		=+E26-D26	=+F26-E26	=+G26-F26
TOTAL INV (MMS)	=+D25+D27		=+E25+E27	=+F25+F27	=+G25+G27
FF INV (MMS)	=+D25+D27		=+E25	=+F25	=-G28
<b>OPERACIÓN</b>					
UT OPERATIVA (MMS)			600	=+E32*1.5	=+F32*1.5
INTERESES (MMS)			=+E20	=+F20	=+G20
UT GRAVABLE (MMS)			=+E32-E33	=+F32-F33	=+G32-G33
IMPUESTOS (MMS)			=+E34*\$C\$7	=+F34*\$C\$7	=+G34*\$C\$7
UT NETA (MMS)			=+E34-E35	=+F34-F35	=+G34-G35
AMORTIZACIÓN (MMS)			=+E21	=+F21	=+G21
DEPRECIACIÓN (MMS)			=+E15	=+F15	=+G15
FF OPER (MMS)			=+E36+E37+E38	=+F36+F37+F38	=+G36+G37+G38
FFN (MMS)	=+D29+D39		=+E29+E39	=+F29+F39	=+G29+G39
WACC (%)	=+C5				
VPN (MMS)	=+VNA(D42,E41:G41)+D41				
TIR (%)	=+TIR(D41:G41)				

**MEJOR ALTERNATIVA**

**LONGPROY**

INVERSIÓN (MMS)	=+D41
FFN (MMS)	235
J (%)	0.05
N (años)	infinito
WACC (%)	=+D42
VPN (MMS)	=+D50/(D54-D51)+D49
TIR (%)	=+D50*(1+D51)/(-D49)+D51

EX 2 - 2

WACC =	25% a
Kd =	18% a
T =	33%

**SHORTPROY**

MOMENTO	(años)	0	1	2	3
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depreciación					
VALOR INICIAL	(MM\$)		1000	800	600
DEPRECIACIÓN	(MM\$)		200	200	200
VALOR FINAL	(MM\$)	1,000	800	600	400

préstamo					
SALDO INICIAL	(MM\$)		1,200	800	400
INTERESES	(MM\$)		216	144	72
AMORTIZACIÓN	(MM\$)		400	400	400
SALDO FINAL	(MM\$)	1,200	800	400	0

INVERSIÓN					
INV EQUIPO	(MM\$)	1,000			-400
KT NECESARIO	(MM\$)	200	300	450	0
INV KT	(MM\$)	200	100	150	-450
TOTAL INV	(MM\$)	1,200	100	150	-850
FF INV	(MM\$)	-1,200	-100	-150	850

OPERACIÓN					
UT OPERATIVA	(MM\$)		600	900	1350
INTERESES	(MM\$)		216	144	72
UT GRAVABLE	(MM\$)		384	756	1,278
IMPUESTOS	(MM\$)		126.72	249.48	422
UT NETA	(MM\$)		257.28	506.52	856
AMORTIZACIÓN	(MM\$)		400	400	400
DEPRECIACIÓN	(MM\$)		200	200	200
FF OPER	(MM\$)		857	1,107	1,456

FFN	(MM\$)	0	757	957	2,306
WACC	(%a)	12.06%			
VPN	(MM\$)	3,076			
TIR	(%a)	N.A.			

**MEJOR ALTERNATIVA**

**LONGTPROY**

INVERSIÓN	(MM\$)	0
FFN	(MM\$)	235
J	(%a)	5%
N	(años)	infinito

WACC	(%a)	12.06%
VPN	(MM\$)	2,129
TIR	(%a)	N.A.

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**EX 2 - 2**

WACC = 0.25 a  
Kd = 0.18 a  
T = 0.33

**SHORTPROY**

<b>MOMENTO</b>	(años)	0	1	2	3
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**depreciación**

VALOR INICIAL (MMS)		=+D16	=+E16	=+F16
DEPRECIACIÓN (MMS)		=+\$D\$16*(1/5)	=+\$D\$16*(1/5)	=+\$D\$16*(1/5)
VALOR FINAL (MMS)	=+D25	=+E14-E15	=+F14-F15	=+G14-G15

**préstamo**

SALDO INICIAL (MMS)		=+D22	=+E22	=+F22
INTERESES (MMS)		=+\$C\$6*E19	=+\$C\$6*F19	=+\$C\$6*G19
AMORTIZACIÓN (MMS)		=+D22/G11	=+E21	=+F21
SALDO FINAL (MMS)	1200	=+E19-E21	=+F19-F21	=+G19-G21

**INVERSIÓN**

INV EQUIPO (MMS)	1000			=-G16
KT NECESARIO (MMS)	200	=+D26*1.5	=+E26*1.5	0
INV KT (MMS)	200	=+E26-D26	=+F26-E26	=+G26-F26
TOTAL INV (MMS)	=+D25+D27	=+E25+E27	=+F25+F27	=+G25+G27
FF INV (MMS)	=-D28	=-E28	=-F28	=-G28

**OPERACIÓN**

UT OPERATIVA (MMS)		600	=+E32*1.5	=+F32*1.5
INTERESES (MMS)		=+E20	=+F20	=+G20
UT GRAVABLE (MMS)		=+E32-E33	=+F32-F33	=+G32-G33
IMPUESTOS (MMS)		=+E34*\$C\$7	=+F34*\$C\$7	=+G34*\$C\$7
UT NETA (MMS)		=+E34-E35	=+F34-F35	=+G34-G35
AMORTIZACIÓN (MMS)		=+E21	=+F21	=+G21
DEPRECIACIÓN (MMS)		=+E15	=+F15	=+G15
FF OPER (MMS)		=+E36+E37+E38	=+F36+F37+F38	=+G36+G37+G38

FFN (MMS) =+D29+D39+D22 =+E29+E39 =+F29+F39 =+G29+G39  
WACC (%a) =+C6\*(1-C7)  
VPN (MMS) =+VNA(D42,E41:G41)+D41  
TIR (%a) N.A.

**MEJOR ALTERNATIVA**

**LONGTPROY**

INVERSIÓN (MMS)	=+D39
FFN (MMS)	=235
J (%a)	0.05
N (años)	infinito

WACC (%a) =+D42  
VPN (MMS) =+D50/(D54-D51)+D29+D49  
TIR (%a) N.A.

EX 2 - 3

WACC =	25% a
Kd =	18% a
T =	33%

**SHORTPROY**

MOMENTO	(años)	0	1	2	3
FFN	(MM\$)	-1,200	502	653	1,955
WACC	(%a)	25%			
VPN	(MM\$)	620			
<b>TIR</b>	<b>(%a)</b>	<b>50.23%</b>			
VPN a t	(MM\$)	-1,200	-798	-380	620
<b>PR</b>	<b>(años)</b>	<b>2.38</b>			

**LONGTPROY**

MOMENTO	(años)	0	1
FFN	(MM\$)	-1,200	235
WACC	(%a)	25%	
VPN	(MM\$)	-25	
<b>TIR</b>	<b>(%a)</b>	<b>25.56%</b>	
VPN a PR	(MM\$)	< 0	
<b>PR</b>	<b>(años)</b>	<b>INF</b>	

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EX 2 - 3

WACC =	0.25	a
Kd =	0.18	a
T =	0.33	

**SHORTPROY**

MOMENTO (años)	0	1	2	3
FFN (M\$)	-1200	502	653	1954.5
WACC (%a)	0.25			
VPN (M\$)	620.224			
TIR (%a)	=+TIR(D13:G13)			
VPN a t (M\$)	=+D13	=+VNA(\$D\$14,\$E\$13:E13)+\$D\$13	=+VNA(\$D\$14,\$E\$13:F13)+\$D\$13	=+VNA(\$D\$14,\$E\$13:G13)+\$D\$13
PR (años)	=+G11-G17/(G17-F17)			

**LONGTPROY**

MOMENTO (años)	0	1
FFN (M\$)	-1200	235
WACC (%a)	0.25	
VPN (M\$)	=+EX 2 - 1!D55	
TIR (%a)	0.255625	
VPN a PR (M\$)	< 0	
PR (años)	INF	

EX 2 - 4

WACC =	12.06% a
Kd =	18.00% a
T =	33%

**SHORTPROY**

MOMENTO	(años)	0	1	2	3
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FFN	(MM\$)	0	757	957	2,306
WACC	(%a)	12%			
VPN	(MM\$)	3,076			
<b>TIR</b>	<b>(%a)</b>	<b>N.A.</b>			
VPN a t	(MM\$)	0	676	1,437	3,076
<b>PR</b>	<b>(años)</b>	<b>0.00</b>			

**LONGTPROY**

MOMENTO	(años)	0	1
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FFN	(MM\$)	0	235
WACC	(%a)	12.06%	
VPN	(MM\$)	2,129	
<b>TIR</b>	<b>(%a)</b>	<b>N.A.</b>	
VPN a t	(MM\$)	0	
<b>PR</b>	<b>(años)</b>	<b>0.00</b>	

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EX 2 - 4

WACC =	=+C6*(1-C7)	a
Kd =	0.18	a
T =	0.33	

**SHORTPROY**

MOMENTO	(años)	0	1	2	3
FFN	(MMS)	0			
WACC	(%)	=+C5	757.28	956.52	2306.26
VPN	(MMS)	=+VNA(D14,E13:G13)+D13			
TIR	(%)		N.A.		
VPN a t	(MMS)	=+D13			
PR	(años)	0	=+VNA(SD\$14,SE\$13:E13)+SD\$13	=+VNA(SD\$14,SE\$13:F13)+SD\$13	=+VNA(SD\$14,SE\$13:G13)+SD\$13

**LONGTPROY**

MOMENTO	(años)	0	1
FFN	(MMS)	0	
WACC	(%)	=+C5	235
VPN	(MMS)	=+E25/(D26-0.05)-1200+D25	
TIR	(%)		N.A.
VPN a t	(MMS)	=235*(1+5%)/(D26-5%)*(1-((1+0.05)/(1+D26))^D30)-C6*(1-C7)*1200*((1+D26)^D30-1)/(1+D26)^D30+D25	
PR	(años)	0	