

Visualizing Subnets Using a VLSM Chart

The VLSM chart is the third method used to visualize the breakdown of subnets and addresses into smaller sizes. By shading or coloring in the boxes you can easily break up your subnets without overlapping your addresses. You can adjust each sub-subnet to the correct size needed.

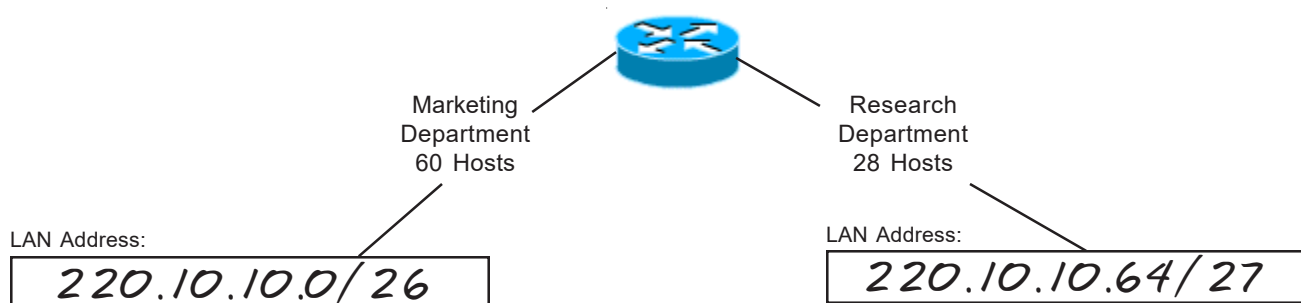
VLSM Addressing

VLSM Chart Method

(Sample)

Problem 17

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the chart. This business will be using the class C address 220.10.10.0. Remember to start with your largest groups first.



Class C Addresses

VLSM Chart 24-30 Bits (4th octet)

/24 255.255.255.0 256 Hosts	/25 255.255.255.128 128 Hosts	/26 255.255.255.192 64 Hosts	/27 255.255.255.224 32 Hosts	/28 255.255.255.240 16 Hosts	/29 255.255.255.248 8 Hosts	/30 255.255.255.252 4 Hosts
0 - 255	0-127	0-63	0-31	0-15	0-7	0-3 4-7
					8-15	8-11 12-15
				16-31	16-23	16-19 20-23
					24-31	24-27 28-31
			32-63	32-47	32-39	32-35 36-39
					40-47	40-43 44-47
				48-63	48-55	48-51 52-55
					56-63	56-59 60-63
		64-127	64-95	64-79	64-71	64-67 68-71
					72-79	72-75 76-79
				80-95	80-87	80-83 84-87
					88-95	88-91 92-95
			96-127	96-111	96-103	96-99 100-103
					104-111	104-107 108-111
				112-127	112-119	112-115 116-119
					120-127	120-123 124-127
	128-255	128-191	128-159	128-143	128-135	128-131 132-135
					136-143	136-139 140-143
				144-159	144-151	144-147 148-151
					152-159	152-155 156-159
			160-191	160-175	16-167	160-163 164-167
					168-175	168-171 172-175
				176-191	176-183	176-179 180-183
					184-191	184-187 188-191
		192-255	192-223	192-207	192-199	192-195 196-199
					200-207	200-203 204-207
				208-223	208-215	208-211 212-215
					216-223	216-219 220-223
			224-255	224-239	224-231	224-227 228-231
					232-239	232-235 236-239
				240-255	240-247	240-243 244-247
					248-255	248-251 252-255

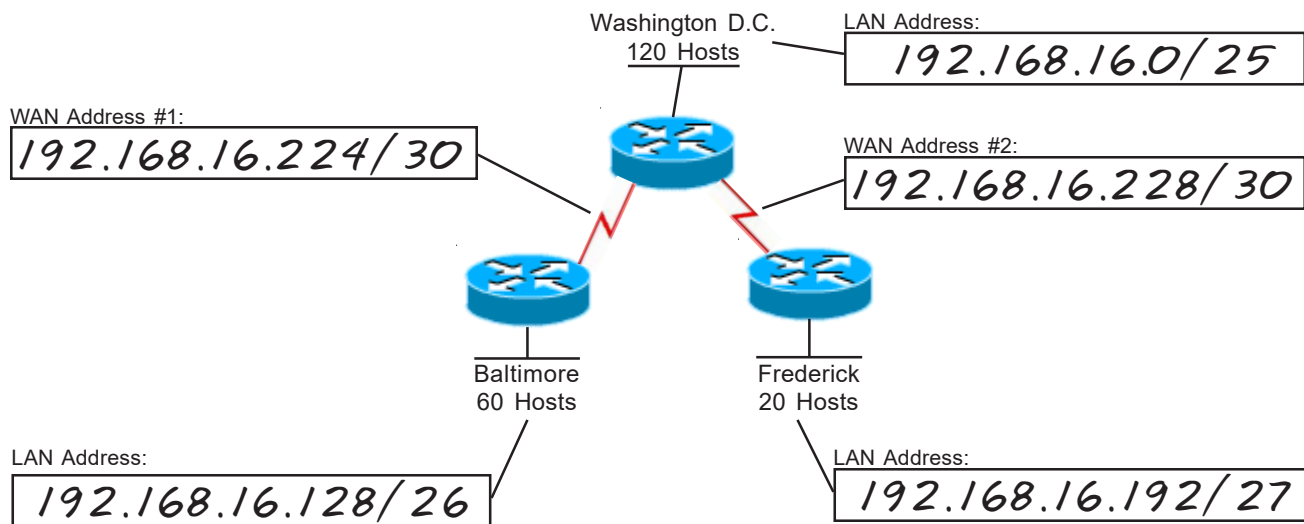
VLSM Addressing

VLSM Chart Method

(Sample)

Problem 18

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the chart. This company will be using the class C address 192.168.16.0. Remember to start with your largest groups first.



Class C Addresses

VLSM Chart 24-30 Bits (4th octet)

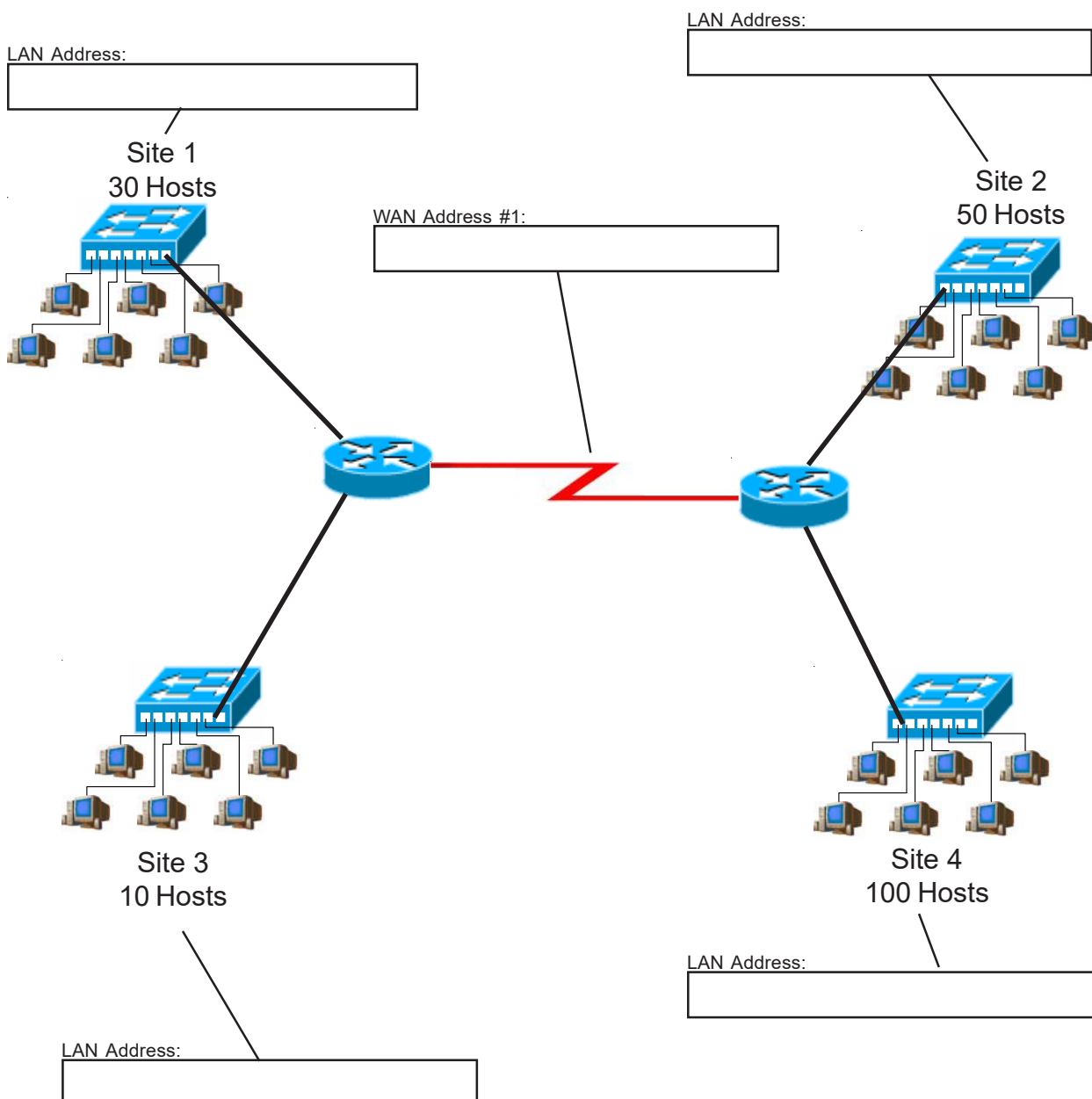
/24 255.255.255.0 256 Hosts	/25 255.255.255.128 128 Hosts	/26 255.255.255.192 64 Hosts	/27 255.255.255.224 32 Hosts	/28 255.255.255.240 16 Hosts	/29 255.255.255.248 8 Hosts	/30 255.255.255.252 4 Hosts
0 - 255	0-127	0-63	0-31	0-15	0-7	0-3 4-7
					8-15	8-11 12-15
				16-31	16-23	16-19 20-23
					24-31	24-27 28-31
		32-63	32-47	32-39	32-39	32-35 36-39
					40-47	40-43 44-47
				48-63	48-55	48-51 52-55
					56-63	56-59 60-63
		64-127	64-95	64-79	64-71	64-67 68-71
					72-79	72-75 76-79
				80-95	80-87	80-83 84-87
					88-95	88-91 92-95
			96-127	96-111	96-103	96-99 100-103
					104-111	104-107 108-111
				112-127	112-119	112-115 116-119
					120-127	120-123 124-127
	128-255	128-191	128-159	128-143	128-135	128-131 132-135
					136-143	136-139 140-143
				144-159	144-151	144-147 148-151
					152-159	152-155 156-159
			160-191	160-175	16-167	160-163 164-167
					168-175	168-171 172-175
				176-191	176-183	176-179 180-183
					184-191	184-187 188-191
		192-255	192-223	192-207	192-199	192-195 196-199
					200-207	200-203 204-207
				208-223	208-215	208-211 212-215
					216-223	216-219 220-223
			224-255	224-239	224-231	224-227 228-231
					232-239	232-235 236-239
				240-255	240-247	240-243 244-247
					248-255	248-251 252-255

VLSM Addressing

VLSM Chart Method

Problem 19

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the chart. This company will be using the class C address 199.55.78.0. Remember to start with your largest groups first.



Class C Addresses

VLSM Chart 24-30 Bits (4th octet)

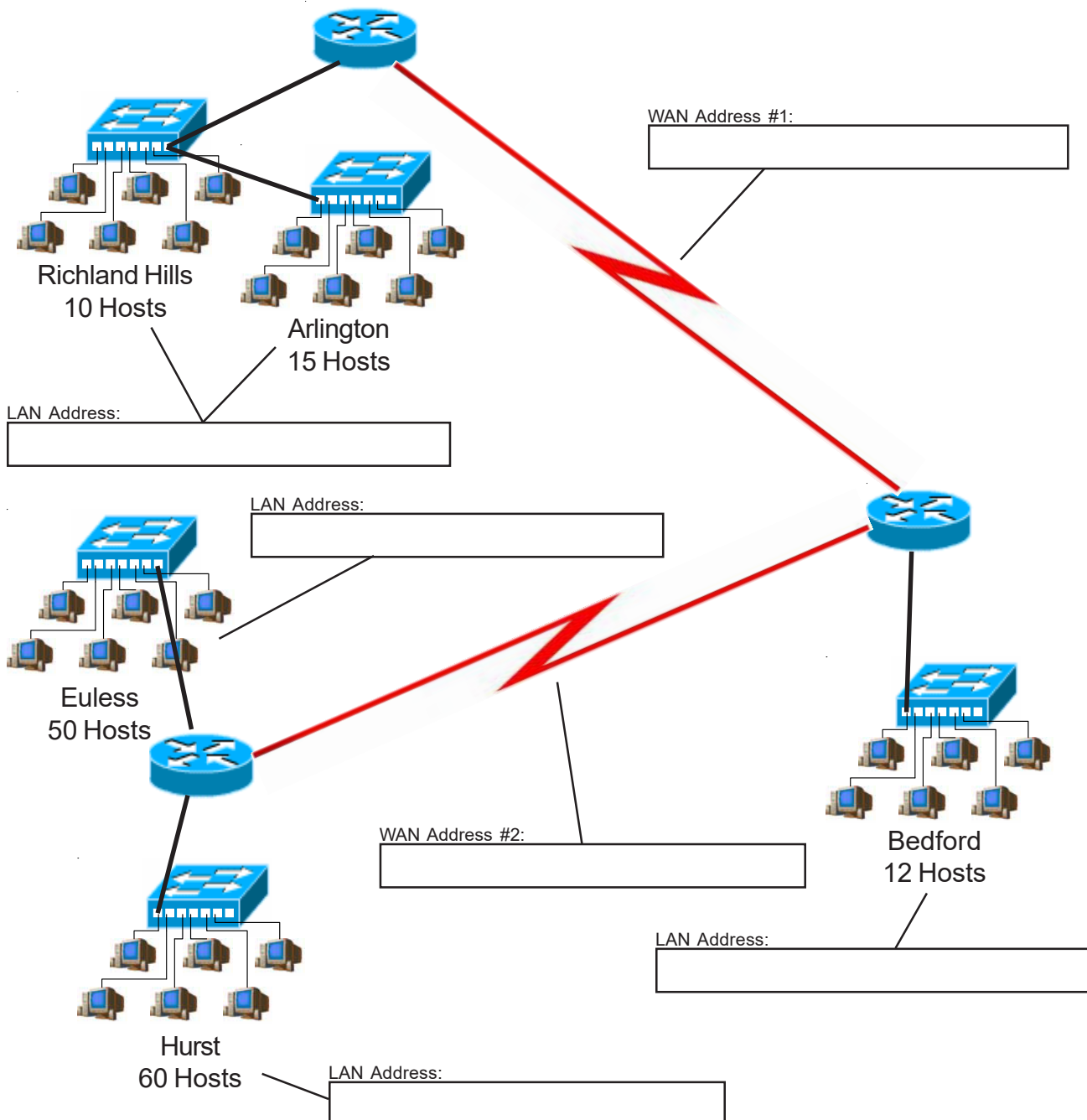
/24	/25	/26	/27	/28	/29	/30				
255.255.255.0 256 Hosts	255.255.255.128 128 Hosts	255.255.255.192 64 Hosts	255.255.255.224 32 Hosts	255.255.255.240 16 Hosts	255.255.255.248 8 Hosts	255.255.255.252 4 Hosts				
0 - 255	0-127	0-63	0-31	0-15	0-7	0-3 4-7				
					8-15	8-11 12-15				
					16-31	16-23	16-19 20-23			
						24-31	24-27 28-31			
				32-63		32-47	32-39	32-35 36-39		
							40-47	40-43 44-47		
					48-63		48-55	48-51 52-55		
							56-63	56-59 60-63		
			64-127			64-95	64-79	64-71	64-67 68-71	
								72-79	72-75 76-79	
					80-95			80-87	80-83 84-87	
								88-95	88-91 92-95	
				96-127			96-111	96-103	96-99 100-103	
								104-111	104-107 108-111	
					112-127			112-119	112-115 116-119	
								120-127	120-123 124-127	
		128-255				128-191	128-159	128-143	128-135	128-131 132-135
									136-143	136-139 140-143
					144-159				144-151	144-147 148-151
									152-159	152-155 156-159
				160-191				160-175	16-167	160-163 164-167
									168-175	168-171 172-175
					176-191				176-183	176-179 180-183
									184-191	184-187 188-191
			192-255				192-223	192-207	192-199	192-195 196-199
									200-207	200-203 204-207
					208-223				208-215	208-211 212-215
									216-223	216-219 220-223
				224-255				224-239	224-231	224-227 228-231
									232-239	232-235 236-239
					240-255				240-247	240-243 244-247
									248-255	248-251 252-255

VLSM Addressing

VLSM Chart Method

Problem 20

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the chart. This company will be using the class C address 223.150.50.0. Remember to start with your largest groups first.



Class C Addresses

VLSM Chart 24-30 Bits (4th octet)

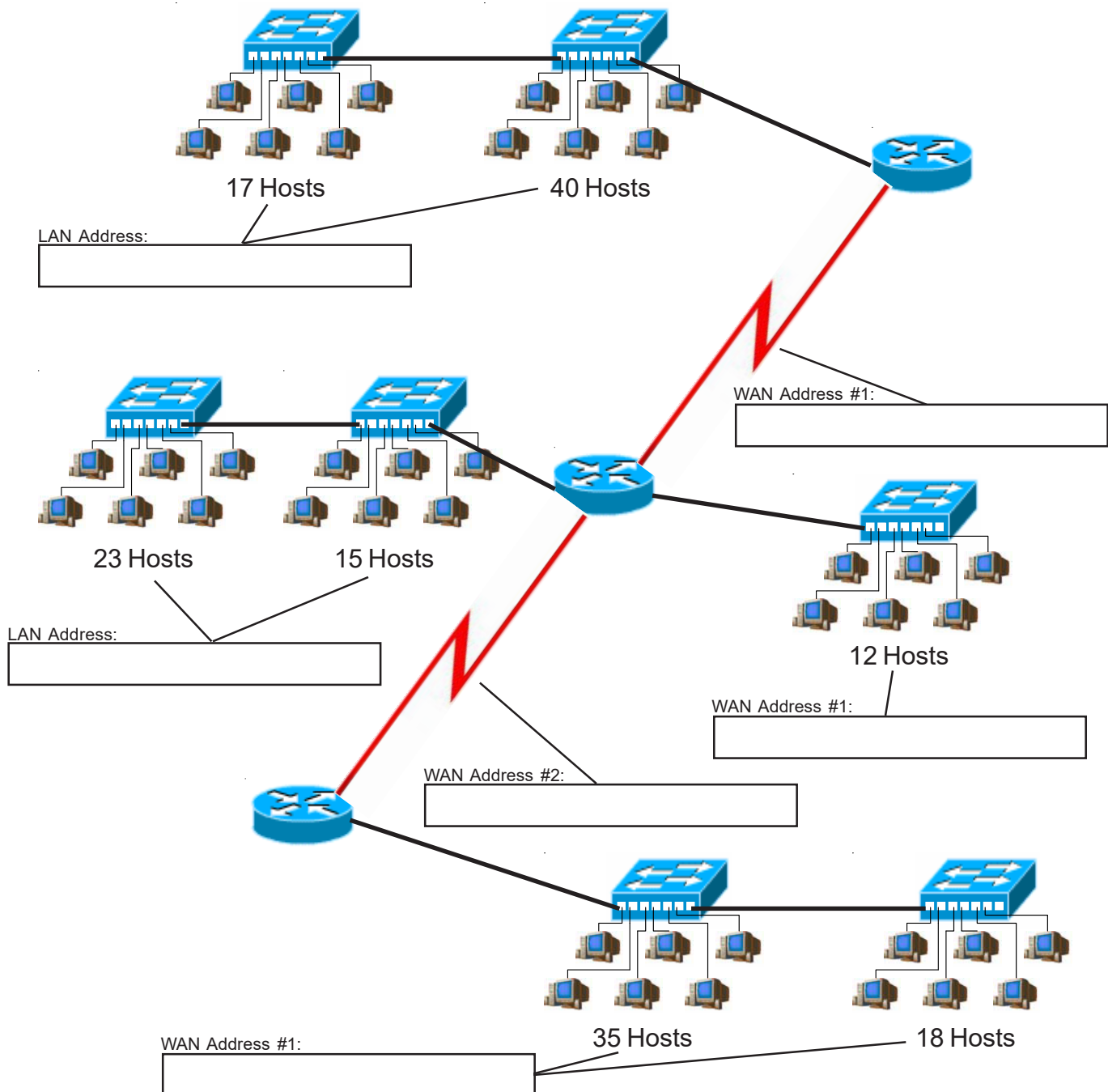
/24 255.255.255.0 256 Hosts	/25 255.255.255.128 128 Hosts	/26 255.255.255.192 64 Hosts	/27 255.255.255.224 32 Hosts	/28 255.255.255.240 16 Hosts	/29 255.255.255.248 8 Hosts	/30 255.255.255.252 4 Hosts
0 - 255	0-127	0-63	0-31	0-15	0-7	0-3
					4-7	4-7
				16-31	8-15	8-11
					12-15	12-15
		32-63	32-47	32-39	16-23	16-19
					20-23	20-23
				40-47	24-31	24-27
					28-31	28-31
			48-63	48-55	32-35	32-35
					36-39	36-39
				56-63	40-43	40-43
					44-47	44-47
	64-127	64-95	64-79	64-71	48-51	48-51
					52-55	52-55
				80-87	56-59	56-59
					60-63	60-63
		96-127	96-111	96-103	64-67	64-67
					68-71	68-71
				104-111	72-75	72-75
					76-79	76-79
			112-127	112-119	80-83	80-83
					84-87	84-87
				120-127	88-91	88-91
					92-95	92-95
	128-255	128-191	128-159	128-143	96-99	96-99
					100-103	100-103
				144-159	104-107	104-107
					108-111	108-111
		160-191	160-175	160-175	112-115	112-115
					116-119	116-119
				176-191	120-123	120-123
					124-127	124-127
		192-255	192-223	192-207	128-131	128-131
					132-135	132-135
				208-223	136-139	136-139
					140-143	140-143
		224-255	224-239	224-231	144-147	144-147
					148-151	148-151
				240-255	152-155	152-155
					156-159	156-159
			240-255	240-247	160-163	160-163
					164-167	164-167
				248-255	168-171	168-171
					172-175	172-175
			240-255	240-247	176-179	176-179
					180-183	180-183
				248-255	184-187	184-187
					188-191	188-191
			240-255	240-247	192-195	192-195
					196-199	196-199
				248-255	200-203	200-203
					204-207	204-207
			240-255	240-247	208-211	208-211
					212-215	212-215
				248-255	216-219	216-219
					220-223	220-223
			240-255	240-247	224-227	224-227
					228-231	228-231
				248-255	232-235	232-235
					236-239	236-239
			240-255	240-247	240-243	240-243
					244-247	244-247
				248-255	248-251	248-251
					252-255	252-255

VLSM Addressing

VLSM Chart Method

Problem 21

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the chart. This company will be using the class C address 222.22.2.0. Remember to start with your largest groups first.



Class C Addresses

VLSM Chart 24-30 Bits (4th octet)

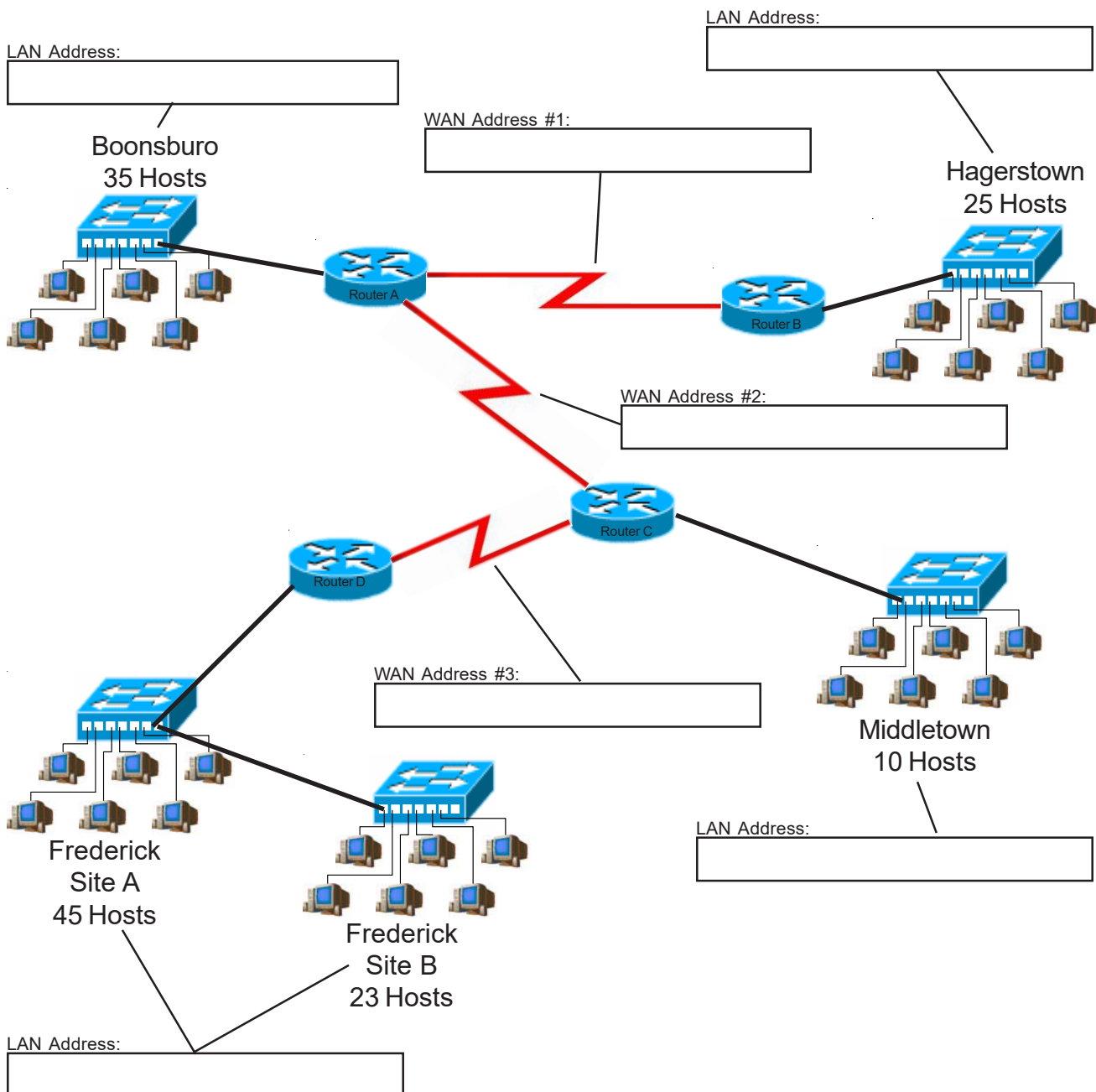
/24	/25	/26	/27	/28	/29	/30				
255.255.255.0 256 Hosts	255.255.255.128 128 Hosts	255.255.255.192 64 Hosts	255.255.255.224 32 Hosts	255.255.255.240 16 Hosts	255.255.255.248 8 Hosts	255.255.255.252 4 Hosts				
0 - 255	0-127	0-63	0-31	0-15	0-7	0-3 4-7				
					8-15	8-11 12-15				
					16-31	16-23	16-19 20-23			
						24-31	24-27 28-31			
				32-63		32-47	32-39	32-35 36-39		
							40-47	40-43 44-47		
					48-63		48-55	48-51 52-55		
							56-63	56-59 60-63		
			64-127			64-95	64-79	64-71	64-67 68-71	
								72-79	72-75 76-79	
					80-95			80-87	80-83 84-87	
								88-95	88-91 92-95	
				96-127			96-111	96-103	96-99 100-103	
								104-111	104-107 108-111	
					112-127			112-119	112-115 116-119	
								120-127	120-123 124-127	
		128-255				128-191	128-159	128-143	128-135	128-131 132-135
									136-143	136-139 140-143
					144-159				144-151	144-147 148-151
									152-159	152-155 156-159
				160-191				160-175	16-167	160-163 164-167
									168-175	168-171 172-175
					176-191				176-183	176-179 180-183
									184-191	184-187 188-191
			192-255				192-223	192-207	192-199	192-195 196-199
									200-207	200-203 204-207
					208-223				208-215	208-211 212-215
									216-223	216-219 220-223
				224-255				224-239	224-231	224-227 228-231
									232-239	232-235 236-239
					240-255				240-247	240-243 244-247
									248-255	248-251 252-255

VLSM Addressing

VLSM Chart Method

Problem 22

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the chart. This company will be using the class C address 200.20.2.0. Remember to start with your largest groups first.



Class C Addresses

VLSM Chart 24-30 Bits (4th octet)

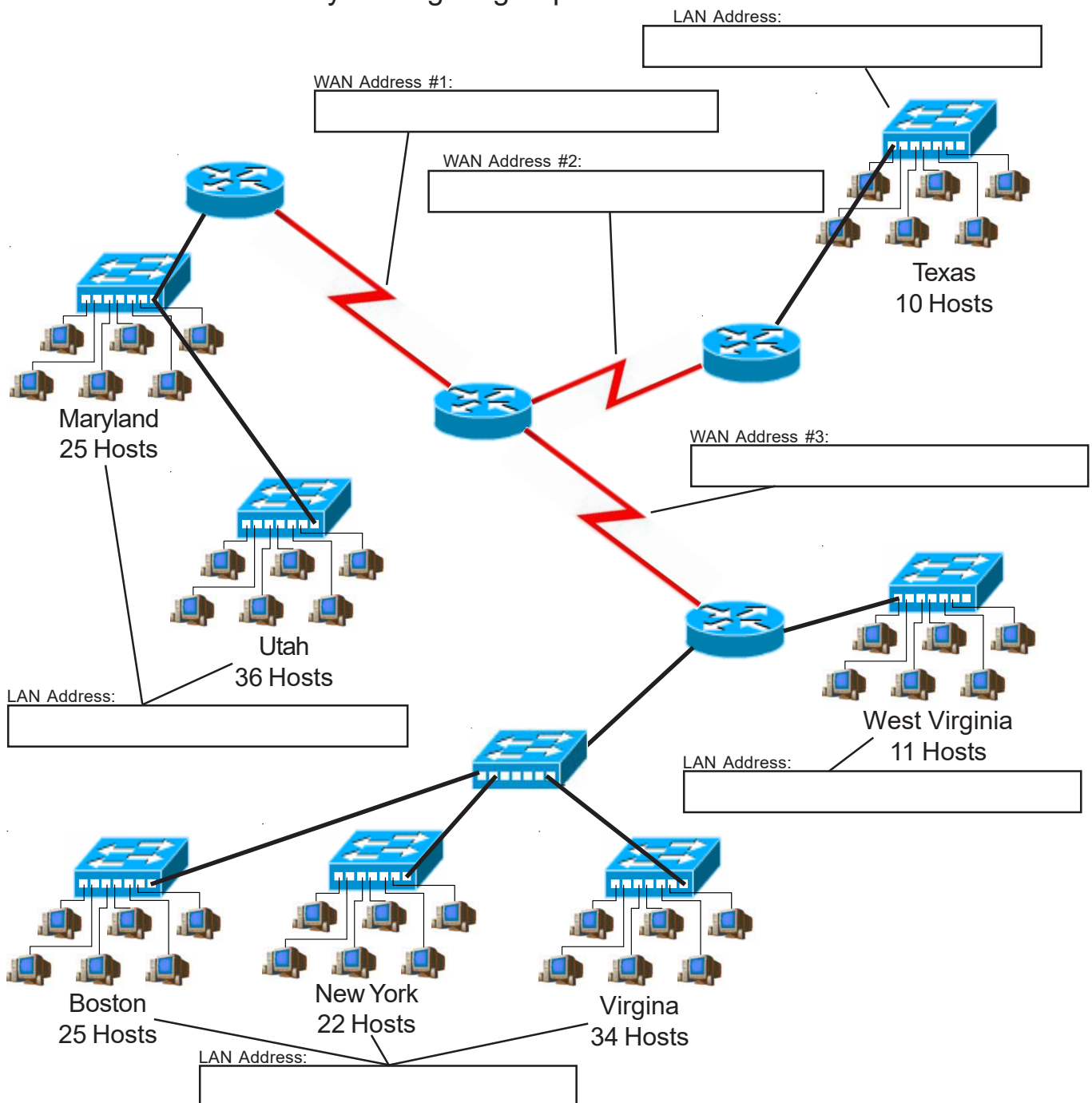
/24 255.255.255.0 256 Hosts	/25 255.255.255.128 128 Hosts	/26 255.255.255.192 64 Hosts	/27 255.255.255.224 32 Hosts	/28 255.255.255.240 16 Hosts	/29 255.255.255.248 8 Hosts	/30 255.255.255.252 4 Hosts
0 - 255	0-127	0-63	0-31	0-15	0-7	0-3
					4-7	4-7
				16-31	8-15	8-11
					12-15	12-15
		32-63	32-47	32-39	16-23	16-19
					20-23	20-23
				40-47	24-31	24-27
					28-31	28-31
			48-63	48-55	32-35	32-35
					36-39	36-39
				56-63	40-43	40-43
					44-47	44-47
	128-255	64-127	64-95	64-79	48-51	48-51
					52-55	52-55
				80-95	56-59	56-59
					60-63	60-63
		96-127	96-111	96-103	64-67	64-67
					68-71	68-71
				104-111	72-75	72-75
					76-79	76-79
			112-127	112-119	80-83	80-83
					84-87	84-87
				120-127	88-91	88-91
					92-95	92-95
	128-191	128-159	128-143	128-135	96-99	96-99
					100-103	100-103
				136-143	104-107	104-107
					108-111	108-111
		160-191	160-175	160-167	112-115	112-115
					116-119	116-119
				176-183	120-123	120-123
					124-127	124-127
	192-255	192-223	192-207	192-199	128-131	128-131
					132-135	132-135
				200-207	136-139	136-139
					140-143	140-143
		224-255	224-239	224-231	144-147	144-147
					148-151	148-151
				232-239	152-155	152-155
					156-159	156-159
		240-255	240-247	240-247	160-163	160-163
					164-167	164-167
				248-255	168-171	168-171
					172-175	172-175
		248-255	248-255	248-255	176-179	176-179
					180-183	180-183
				252-255	184-187	184-187
					188-191	188-191

VLSM Addressing

VLSM Chart Method

Problem 23

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the chart. This company will be using the class C address 190.150.23.0. Remember to start with your largest groups first.



Class C Addresses

VLSM Chart 24-30 Bits (4th octet)

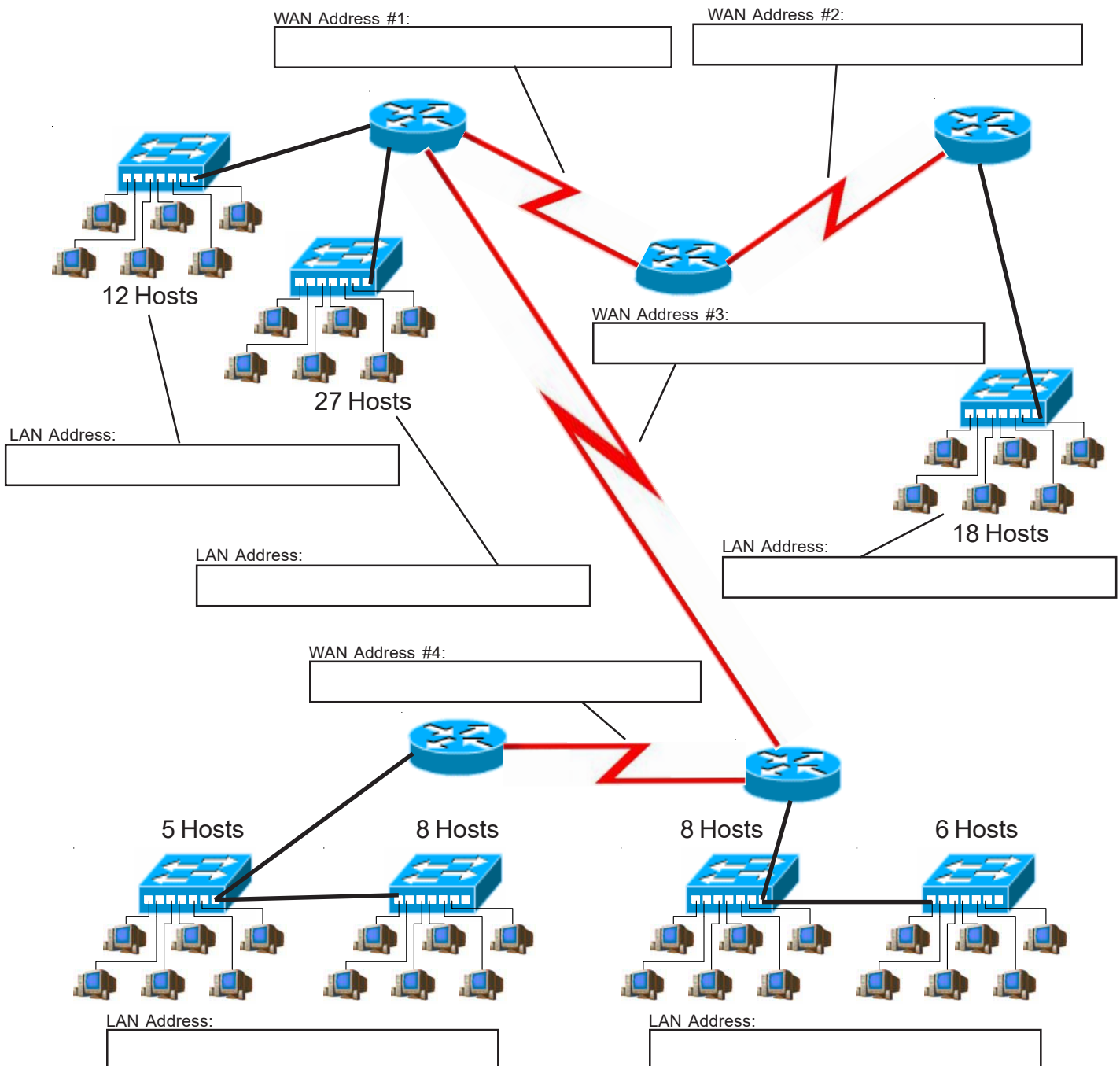
/24	/25	/26	/27	/28	/29	/30		
255.255.255.0 256 Hosts	255.255.255.128 128 Hosts	255.255.255.192 64 Hosts	255.255.255.224 32 Hosts	255.255.255.240 16 Hosts	255.255.255.248 8 Hosts	255.255.255.252 4 Hosts		
0 - 255	0-127	0-63	0-31	0-15	0-7	0-3		
					4-7	4-7		
				16-31	8-15	8-11		
					12-15	12-15		
				32-63	32-47	16-23	16-19	
						20-23	20-23	
			48-63		24-31	24-27		
					28-31	28-31		
			64-127		64-95	64-79	32-39	32-35
							36-39	36-39
				80-95		40-47	40-43	
						44-47	44-47	
		96-111		48-55		48-51		
				52-55		52-55		
		96-127		96-103	56-63	56-59		
					60-63	60-63		
				104-111	64-71	64-67		
					68-71	68-71		
				112-127	72-79	72-75		
					76-79	76-79		
		128-255	128-191	128-159	128-143	80-87	80-83	
						84-87	84-87	
					144-159	88-95	88-91	
						92-95	92-95	
				160-191	160-175	96-103	96-99	
						100-103	100-103	
					176-191	104-111	104-107	
						108-111	108-111	
				192-255	192-223	192-207	112-119	112-115
							116-119	116-119
						208-223	120-123	120-123
							124-127	124-127
			224-255		224-239	128-135	128-131	
						132-135	132-135	
				240-255	136-143	136-139		
					140-143	140-143		
	192-255			192-223	192-207	144-151	144-147	
						148-151	148-151	
			208-223		152-159	152-155		
					156-159	156-159		
			224-239		16-167	160-163		
					164-167	164-167		
			240-255	240-247	168-175	168-171		
					172-175	172-175		
				248-255	176-183	176-179		
					180-183	180-183		
				248-255	248-255	248-255	184-191	184-187
							188-191	188-191
			252-255			192-199	192-195	
						196-199	196-199	
		256-259	200-207		200-203			
			204-207		204-207			
		260-263	260-263		208-215	208-211		
					212-215	212-215		
	264-267	264-267	216-223		216-219			
			220-223		220-223			
	268-271	268-271	224-231		224-227			
			228-231		228-231			
	272-275	272-275	232-239	232-235				
			236-239	236-239				
	276-279	276-279	240-247	240-243				
			244-247	244-247				
	280-283	280-283	248-255	248-251				
			252-255	252-255				

VLSM Addressing

VLSM Chart Method

Problem 24

Using the network diagram and information given create an addressing scheme which utilizes variable-length subnet masks. Show the subnet address and CIDR in the boxes below, color or shade the sub-subnets used in the chart. This company will be using the class C address 192.168.1.0. Remember to start with your largest groups first.



Class C Addresses

VLSM Chart 24-30 Bits (4th octet)

/24	/25	/26	/27	/28	/29	/30
255.255.255.0 256 Hosts	255.255.255.128 128 Hosts	255.255.255.192 64 Hosts	255.255.255.224 32 Hosts	255.255.255.240 16 Hosts	255.255.255.248 8 Hosts	255.255.255.252 4 Hosts
0 - 255	0-127	0-63	0-31	0-15	0-7	0-3
						4-7
					8-15	8-11
						12-15
				16-31	16-23	16-19
						20-23
					24-31	24-27
						28-31
			32-63	32-47	32-39	32-35
						36-39
					40-47	40-43
						44-47
				48-63	48-55	48-51
						52-55
					56-63	56-59
						60-63
		64-127	64-95	64-79	64-71	64-67
						68-71
					72-79	72-75
						76-79
				80-95	80-87	80-83
						84-87
					88-95	88-91
						92-95
			96-127	96-111	96-103	96-99
						100-103
					104-111	104-107
						108-111
				112-127	112-119	112-115
						116-119
					120-127	120-123
						124-127
	128-255	128-191	128-159	128-143	128-135	128-131
						132-135
					136-143	136-139
						140-143
				144-159	144-151	144-147
						148-151
					152-159	152-155
						156-159
			160-191	160-175	16-167	160-163
						164-167
					168-175	168-171
						172-175
				176-191	176-183	176-179
						180-183
					184-191	184-187
						188-191
		192-255	192-223	192-207	192-199	192-195
						196-199
					200-207	200-203
						204-207
				208-223	208-215	208-211
						212-215
					216-223	216-219
						220-223
			224-255	224-239	224-231	224-227
						228-231
					232-239	232-235
						236-239
				240-255	240-247	240-243
						244-247
					248-255	248-251
						252-255