

Name: \_\_\_\_\_

You must show work to receive credit. The ASCII table is on the back of this worksheet.

- How many bits does the following ASCII phrase have: "You are awesome!"
- How many BYTES does the phrase from question 1 have?
- Using the ASCII table, convert your first name to bits. Use the format of 8 bits for every character.

- Now convert your first name to hexadecimal.

	Dec	Hx	Oct	Html	Chr		Dec	Hx	Oct	Html	Chr		Dec	Hx	Oct	Html	Chr
	32	20	040	&#32;	Space		64	40	100	&#64;	@		96	60	140	&#96;	`
	33	21	041	&#33;	!		65	41	101	&#65;	A		97	61	141	&#97;	a
	34	22	042	&#34;	"		66	42	102	&#66;	B		98	62	142	&#98;	b
	35	23	043	&#35;	#		67	43	103	&#67;	C		99	63	143	&#99;	c
	36	24	044	&#36;	\$		68	44	104	&#68;	D		100	64	144	&#100;	d
	37	25	045	&#37;	%		69	45	105	&#69;	E		101	65	145	&#101;	e
	38	26	046	&#38;	&		70	46	106	&#70;	F		102	66	146	&#102;	f
	39	27	047	&#39;	'		71	47	107	&#71;	G		103	67	147	&#103;	g
	40	28	050	&#40;	(		72	48	110	&#72;	H		104	68	150	&#104;	h
	41	29	051	&#41;	)		73	49	111	&#73;	I		105	69	151	&#105;	i
ne)	42	2A	052	&#42;	*		74	4A	112	&#74;	J		106	6A	152	&#106;	j
ge)	43	2B	053	&#43;	+		75	4B	113	&#75;	K		107	6B	153	&#107;	k
	44	2C	054	&#44;	,		76	4C	114	&#76;	L		108	6C	154	&#108;	l
	45	2D	055	&#45;	-		77	4D	115	&#77;	M		109	6D	155	&#109;	m
	46	2E	056	&#46;	.		78	4E	116	&#78;	N		110	6E	156	&#110;	n
	47	2F	057	&#47;	/		79	4F	117	&#79;	O		111	6F	157	&#111;	o
	48	30	060	&#48;	0		80	50	120	&#80;	P		112	70	160	&#112;	p
	49	31	061	&#49;	1		81	51	121	&#81;	Q		113	71	161	&#113;	q
	50	32	062	&#50;	2		82	52	122	&#82;	R		114	72	162	&#114;	r
	51	33	063	&#51;	3		83	53	123	&#83;	S		115	73	163	&#115;	s
	52	34	064	&#52;	4		84	54	124	&#84;	T		116	74	164	&#116;	t
)	53	35	065	&#53;	5		85	55	125	&#85;	U		117	75	165	&#117;	u
	54	36	066	&#54;	6		86	56	126	&#86;	V		118	76	166	&#118;	v
	55	37	067	&#55;	7		87	57	127	&#87;	W		119	77	167	&#119;	w
	56	38	070	&#56;	8		88	58	130	&#88;	X		120	78	170	&#120;	x
	57	39	071	&#57;	9		89	59	131	&#89;	Y		121	79	171	&#121;	y
	58	3A	072	&#58;	:		90	5A	132	&#90;	Z		122	7A	172	&#122;	z
	59	3B	073	&#59;	;		91	5B	133	&#91;	[		123	7B	173	&#123;	{
	60	3C	074	&#60;	<		92	5C	134	&#92;	\		124	7C	174	&#124;	
	61	3D	075	&#61;	=		93	5D	135	&#93;	]		125	7D	175	&#125;	}
	62	3E	076	&#62;	>		94	5E	136	&#94;	^		126	7E	176	&#126;	~
	63	3F	077	&#63;	?		95	5F	137	&#95;	_		127	7F	177	&#127;	DEL

Source: [www.LookupTables.com](http://www.LookupTables.com)

5. Write out the algorithm or instructions in step by step format to convert a binary number to decimal.
6. Write out the algorithm or instructions in step by step format to convert a decimal number to binary.
7. Write out the algorithm or instructions in step by step format to convert an ASCII character to binary.