

Homework 5 (PSTAT 131/231)

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Contents

Elastic Net Tuning	1
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Elastic Net Tuning

For this assignment, we will be working with the file "`pokemon.csv`", found in `/data`. The file is from Kaggle: <https://www.kaggle.com/abcsds/pokemon>.

The Pokémon franchise encompasses video games, TV shows, movies, books, and a card game. This data set was drawn from the video game series and contains statistics about 721 Pokémon, or “pocket monsters.” In Pokémon games, the user plays as a trainer who collects, trades, and battles Pokémon to (a) collect all the Pokémon and (b) become the champion Pokémon trainer.

Each Pokémon has a primary type (some even have secondary types). Based on their type, a Pokémon is strong against some types, and vulnerable to others. (Think rock, paper, scissors.) A Fire-type Pokémon, for example, is vulnerable to Water-type Pokémon, but strong against Grass-type.



Figure 1: Fig 1. Darkrai, a Dark-type mythical Pokémon from Generation 4.

The goal of this assignment is to build a statistical learning model that can predict the **primary type** of a Pokémon based on its generation, legendary status, and six battle statistics.

Read in the file and familiarize yourself with the variables using `pokemon_codebook.txt`.

```
library(glmnet)
library(tidyverse)
library(tidymodels)
```

```
library(ISLR)
library(ggplot2)
library(dplyr)
```

Exercise 1

Install and load the `janitor` package. Use its `clean_names()` function on the Pokémon data, and save the results to work with for the rest of the assignment. What happened to the data? Why do you think `clean_names()` is useful?

```
library(janitor)
```

```
Pokemon <- read.csv("C:\\Users\\Jonat\\OneDrive\\schoolwork\\PSTAT 131\\HW\\HW 5\\homework-5\\data\\Pok
Pokemon
```

##	X.	Name	Type.1	Type.2	Total	HP	Attack	Defense	
## 1	1	Bulbasaur	Grass	Poison	318	45	49	49	
## 2	2	Ivysaur	Grass	Poison	405	60	62	63	
## 3	3	Venusaur	Grass	Poison	525	80	82	83	
## 4	3	VenusaurMega Venusaur	Grass	Poison	625	80	100	123	
## 5	4	Charmander	Fire		309	39	52	43	
## 6	5	Charmeleon	Fire		405	58	64	58	
## 7	6	Charizard	Fire	Flying	534	78	84	78	
## 8	6	CharizardMega Charizard X	Fire	Dragon	634	78	130	111	
## 9	6	CharizardMega Charizard Y	Fire	Flying	634	78	104	78	
## 10	7	Squirtle	Water		314	44	48	65	
## 11	8	Wartortle	Water		405	59	63	80	
## 12	9	Blastoise	Water		530	79	83	100	
## 13	9	BlastoiseMega Blastoise	Water		630	79	103	120	
## 14	10	Caterpie	Bug		195	45	30	35	
## 15	11	Metapod	Bug		205	50	20	55	
## 16	12	Butterfree	Bug	Flying	395	60	45	50	
## 17	13	Weedle	Bug	Poison	195	40	35	30	
## 18	14	Kakuna	Bug	Poison	205	45	25	50	
## 19	15	Beedrill	Bug	Poison	395	65	90	40	
## 20	15	BeedrillMega Beedrill	Bug	Poison	495	65	150	40	
## 21	16	Pidgey	Normal	Flying	251	40	45	40	
## 22	17	Pidgeotto	Normal	Flying	349	63	60	55	
## 23	18	Pidgeot	Normal	Flying	479	83	80	75	
## 24	18	PidgeotMega Pidgeot	Normal	Flying	579	83	80	80	
## 25	19	Rattata	Normal		253	30	56	35	
## 26	20	Raticate	Normal		413	55	81	60	
## 27	21	Spearow	Normal	Flying	262	40	60	30	
## 28	22	Fearow	Normal	Flying	442	65	90	65	
## 29	23	Ekans	Poison		288	35	60	44	
## 30	24	Arbok	Poison		438	60	85	69	
## 31	25	Pikachu	Electric		320	35	55	40	
## 32	26	Raichu	Electric		485	60	90	55	
## 33	27	Sandshrew	Ground		300	50	75	85	
## 34	28	Sandslash	Ground		450	75	100	110	
## 35	29	Nidoran♀\231\200	Poison			275	55	47	52
## 36	30	Nidorina	Poison		365	70	62	67	

## 37	31	Nidoqueen	Poison	Ground	505	90	92	87
## 38	32	Nidoran♀	Poison		273	46	57	40
## 39	33	Nidorino	Poison		365	61	72	57
## 40	34	Nidoking	Poison	Ground	505	81	102	77
## 41	35	Clefairy	Fairy		323	70	45	48
## 42	36	Clefable	Fairy		483	95	70	73
## 43	37	Vulpix	Fire		299	38	41	40
## 44	38	Ninetales	Fire		505	73	76	75
## 45	39	Jigglypuff	Normal	Fairy	270	115	45	20
## 46	40	Wigglytuff	Normal	Fairy	435	140	70	45
## 47	41	Zubat	Poison	Flying	245	40	45	35
## 48	42	Golbat	Poison	Flying	455	75	80	70
## 49	43	Oddish	Grass	Poison	320	45	50	55
## 50	44	Gloom	Grass	Poison	395	60	65	70
## 51	45	Vileplume	Grass	Poison	490	75	80	85
## 52	46	Paras	Bug	Grass	285	35	70	55
## 53	47	Parasect	Bug	Grass	405	60	95	80
## 54	48	Venonat	Bug	Poison	305	60	55	50
## 55	49	Venomoth	Bug	Poison	450	70	65	60
## 56	50	Diglett	Ground		265	10	55	25
## 57	51	Dugtrio	Ground		405	35	80	50
## 58	52	Meowth	Normal		290	40	45	35
## 59	53	Persian	Normal		440	65	70	60
## 60	54	Psyduck	Water		320	50	52	48
## 61	55	Golduck	Water		500	80	82	78
## 62	56	Mankey	Fighting		305	40	80	35
## 63	57	Primeape	Fighting		455	65	105	60
## 64	58	Growlithe	Fire		350	55	70	45
## 65	59	Arcanine	Fire		555	90	110	80
## 66	60	Poliwhag	Water		300	40	50	40
## 67	61	Poliwhirl	Water		385	65	65	65
## 68	62	Poliwrath	Water	Fighting	510	90	95	95
## 69	63	Abra	Psychic		310	25	20	15
## 70	64	Kadabra	Psychic		400	40	35	30
## 71	65	Alakazam	Psychic		500	55	50	45
## 72	65	AlakazamMega	Alakazam	Psychic	590	55	50	65
## 73	66	Machop	Fighting		305	70	80	50
## 74	67	Machoke	Fighting		405	80	100	70
## 75	68	Machop	Fighting		505	90	130	80
## 76	69	Bellsprout	Grass	Poison	300	50	75	35
## 77	70	Weepinbell	Grass	Poison	390	65	90	50
## 78	71	Victreebel	Grass	Poison	490	80	105	65
## 79	72	Tentacool	Water	Poison	335	40	40	35
## 80	73	Tentacruel	Water	Poison	515	80	70	65
## 81	74	Geodude	Rock	Ground	300	40	80	100
## 82	75	Graveler	Rock	Ground	390	55	95	115
## 83	76	Golem	Rock	Ground	495	80	120	130
## 84	77	Ponyta	Fire		410	50	85	55
## 85	78	Rapidash	Fire		500	65	100	70
## 86	79	Slowpoke	Water	Psychic	315	90	65	65
## 87	80	Slowbro	Water	Psychic	490	95	75	110
## 88	80	SlowbroMega	Slowbro	Water	590	95	75	180
## 89	81	Magnemite	Electric	Steel	325	25	35	70
## 90	82	Magneton	Electric	Steel	465	50	60	95

## 91	83	Farfetch'd	Normal	Flying	352	52	65	55
## 92	84	Doduo	Normal	Flying	310	35	85	45
## 93	85	Dodrio	Normal	Flying	460	60	110	70
## 94	86	Seel	Water		325	65	45	55
## 95	87	Dewgong	Water	Ice	475	90	70	80
## 96	88	Grimer	Poison		325	80	80	50
## 97	89	Muk	Poison		500	105	105	75
## 98	90	Shellder	Water		305	30	65	100
## 99	91	Cloyster	Water	Ice	525	50	95	180
## 100	92	Gastly	Ghost	Poison	310	30	35	30
## 101	93	Haunter	Ghost	Poison	405	45	50	45
## 102	94	Gengar	Ghost	Poison	500	60	65	60
## 103	94	GengarMega Gengar	Ghost	Poison	600	60	65	80
## 104	95	Onix	Rock	Ground	385	35	45	160
## 105	96	Drowzee	Psychic		328	60	48	45
## 106	97	Hypno	Psychic		483	85	73	70
## 107	98	Krabby	Water		325	30	105	90
## 108	99	Kingler	Water		475	55	130	115
## 109	100	Voltorb	Electric		330	40	30	50
## 110	101	Electrode	Electric		480	60	50	70
## 111	102	Exeggcute	Grass	Psychic	325	60	40	80
## 112	103	Exeggutor	Grass	Psychic	520	95	95	85
## 113	104	Cubone	Ground		320	50	50	95
## 114	105	Marowak	Ground		425	60	80	110
## 115	106	Hitmonlee	Fighting		455	50	120	53
## 116	107	Hitmonchan	Fighting		455	50	105	79
## 117	108	Lickitung	Normal		385	90	55	75
## 118	109	Koffing	Poison		340	40	65	95
## 119	110	Weezing	Poison		490	65	90	120
## 120	111	Rhyhorn	Ground	Rock	345	80	85	95
## 121	112	Rhydon	Ground	Rock	485	105	130	120
## 122	113	Chansey	Normal		450	250	5	5
## 123	114	Tangela	Grass		435	65	55	115
## 124	115	Kangaskhan	Normal		490	105	95	80
## 125	115	KangaskhanMega Kangaskhan	Normal		590	105	125	100
## 126	116	Horsea	Water		295	30	40	70
## 127	117	Seadra	Water		440	55	65	95
## 128	118	Goldeen	Water		320	45	67	60
## 129	119	Seaking	Water		450	80	92	65
## 130	120	Staryu	Water		340	30	45	55
## 131	121	Starmie	Water	Psychic	520	60	75	85
## 132	122	Mr. Mime	Psychic	Fairy	460	40	45	65
## 133	123	Scyther	Bug	Flying	500	70	110	80
## 134	124	Jynx	Ice	Psychic	455	65	50	35
## 135	125	Electabuzz	Electric		490	65	83	57
## 136	126	Magmar	Fire		495	65	95	57
## 137	127	Pinsir	Bug		500	65	125	100
## 138	127	PinsirMega Pinsir	Bug	Flying	600	65	155	120
## 139	128	Tauros	Normal		490	75	100	95
## 140	129	Magikarp	Water		200	20	10	55
## 141	130	Gyarados	Water	Flying	540	95	125	79
## 142	130	GyaradosMega Gyarados	Water	Dark	640	95	155	109
## 143	131	Lapras	Water	Ice	535	130	85	80
## 144	132	Ditto	Normal		288	48	48	48

##	145	133	Eevee	Normal		325	55	55	50
##	146	134	Vaporeon	Water		525	130	65	60
##	147	135	Jolteon	Electric		525	65	65	60
##	148	136	Flareon	Fire		525	65	130	60
##	149	137	Porygon	Normal		395	65	60	70
##	150	138	Omanyte	Rock	Water	355	35	40	100
##	151	139	Omastar	Rock	Water	495	70	60	125
##	152	140	Kabuto	Rock	Water	355	30	80	90
##	153	141	Kabutops	Rock	Water	495	60	115	105
##	154	142	Aerodactyl	Rock	Flying	515	80	105	65
##	155	142	AerodactylMega Aerodactyl	Rock	Flying	615	80	135	85
##	156	143	Snorlax	Normal		540	160	110	65
##	157	144	Articuno	Ice	Flying	580	90	85	100
##	158	145	Zapdos	Electric	Flying	580	90	90	85
##	159	146	Moltres	Fire	Flying	580	90	100	90
##	160	147	Dratini	Dragon		300	41	64	45
##	161	148	Dragonair	Dragon		420	61	84	65
##	162	149	Dragonite	Dragon	Flying	600	91	134	95
##	163	150	Mewtwo	Psychic		680	106	110	90
##	164	150	MewtwoMega Mewtwo X	Psychic	Fighting	780	106	190	100
##	165	150	MewtwoMega Mewtwo Y	Psychic		780	106	150	70
##	166	151	Mew	Psychic		600	100	100	100
##	167	152	Chikorita	Grass		318	45	49	65
##	168	153	Bayleef	Grass		405	60	62	80
##	169	154	Meganium	Grass		525	80	82	100
##	170	155	Cyndaquil	Fire		309	39	52	43
##	171	156	Quilava	Fire		405	58	64	58
##	172	157	Typhlosion	Fire		534	78	84	78
##	173	158	Totodile	Water		314	50	65	64
##	174	159	Croconaw	Water		405	65	80	80
##	175	160	Feraligatr	Water		530	85	105	100
##	176	161	Sentret	Normal		215	35	46	34
##	177	162	Furret	Normal		415	85	76	64
##	178	163	Hoothoot	Normal	Flying	262	60	30	30
##	179	164	Noctowl	Normal	Flying	442	100	50	50
##	180	165	Ledyba	Bug	Flying	265	40	20	30
##	181	166	Ledian	Bug	Flying	390	55	35	50
##	182	167	Spinarak	Bug	Poison	250	40	60	40
##	183	168	Ariados	Bug	Poison	390	70	90	70
##	184	169	Crobat	Poison	Flying	535	85	90	80
##	185	170	Chinchou	Water	Electric	330	75	38	38
##	186	171	Lanturn	Water	Electric	460	125	58	58
##	187	172	Pichu	Electric		205	20	40	15
##	188	173	Cleffa	Fairy		218	50	25	28
##	189	174	Igglybuff	Normal	Fairy	210	90	30	15
##	190	175	Togepi	Fairy		245	35	20	65
##	191	176	Togetic	Fairy	Flying	405	55	40	85
##	192	177	Natu	Psychic	Flying	320	40	50	45
##	193	178	Xatu	Psychic	Flying	470	65	75	70
##	194	179	Mareep	Electric		280	55	40	40
##	195	180	Flaaffy	Electric		365	70	55	55
##	196	181	Ampharos	Electric		510	90	75	85
##	197	181	AmpharosMega Ampharos	Electric	Dragon	610	90	95	105
##	198	182	Bellossom	Grass		490	75	80	95

##	199	183	Marill	Water	Fairy	250	70	20	50
##	200	184	Azumarill	Water	Fairy	420	100	50	80
##	201	185	Sudowoodo	Rock		410	70	100	115
##	202	186	Politoed	Water		500	90	75	75
##	203	187	Hoppip	Grass	Flying	250	35	35	40
##	204	188	Skiploom	Grass	Flying	340	55	45	50
##	205	189	Jumpluff	Grass	Flying	460	75	55	70
##	206	190	Aipom	Normal		360	55	70	55
##	207	191	Sunkern	Grass		180	30	30	30
##	208	192	Sunflora	Grass		425	75	75	55
##	209	193	Yanma	Bug	Flying	390	65	65	45
##	210	194	Wooper	Water	Ground	210	55	45	45
##	211	195	Quagsire	Water	Ground	430	95	85	85
##	212	196	Espeon	Psychic		525	65	65	60
##	213	197	Umbreon	Dark		525	95	65	110
##	214	198	Murkrow	Dark	Flying	405	60	85	42
##	215	199	Slowking	Water	Psychic	490	95	75	80
##	216	200	Misdreavus	Ghost		435	60	60	60
##	217	201	Unown	Psychic		336	48	72	48
##	218	202	Wobbuffet	Psychic		405	190	33	58
##	219	203	Girafarig	Normal	Psychic	455	70	80	65
##	220	204	Pineco	Bug		290	50	65	90
##	221	205	Forretress	Bug	Steel	465	75	90	140
##	222	206	Dunsparce	Normal		415	100	70	70
##	223	207	Gligar	Ground	Flying	430	65	75	105
##	224	208	Steelix	Steel	Ground	510	75	85	200
##	225	208	SteelixMega Steelix	Steel	Ground	610	75	125	230
##	226	209	Snubbull	Fairy		300	60	80	50
##	227	210	Granbull	Fairy		450	90	120	75
##	228	211	Qwilfish	Water	Poison	430	65	95	75
##	229	212	Scizor	Bug	Steel	500	70	130	100
##	230	212	ScizorMega Scizor	Bug	Steel	600	70	150	140
##	231	213	Shuckle	Bug	Rock	505	20	10	230
##	232	214	Heracross	Bug	Fighting	500	80	125	75
##	233	214	HeracrossMega Heracross	Bug	Fighting	600	80	185	115
##	234	215	Sneasel	Dark	Ice	430	55	95	55
##	235	216	Teddiursa	Normal		330	60	80	50
##	236	217	Ursaring	Normal		500	90	130	75
##	237	218	Slugma	Fire		250	40	40	40
##	238	219	Magcargo	Fire	Rock	410	50	50	120
##	239	220	Swinub	Ice	Ground	250	50	50	40
##	240	221	Piloswine	Ice	Ground	450	100	100	80
##	241	222	Corsola	Water	Rock	380	55	55	85
##	242	223	Remoraid	Water		300	35	65	35
##	243	224	Octillery	Water		480	75	105	75
##	244	225	Delibird	Ice	Flying	330	45	55	45
##	245	226	Mantine	Water	Flying	465	65	40	70
##	246	227	Skarmory	Steel	Flying	465	65	80	140
##	247	228	Houndour	Dark	Fire	330	45	60	30
##	248	229	Houndoom	Dark	Fire	500	75	90	50
##	249	229	HoundoomMega Houndoom	Dark	Fire	600	75	90	90
##	250	230	Kingdra	Water	Dragon	540	75	95	95
##	251	231	Phanpy	Ground		330	90	60	60
##	252	232	Donphan	Ground		500	90	120	120

##	253	233	Porygon2	Normal		515	85	80	90
##	254	234	Stantler	Normal		465	73	95	62
##	255	235	Smeargle	Normal		250	55	20	35
##	256	236	Tyrogue	Fighting		210	35	35	35
##	257	237	Hitmontop	Fighting		455	50	95	95
##	258	238	Smoochum	Ice	Psychic	305	45	30	15
##	259	239	Elekid	Electric		360	45	63	37
##	260	240	Magby	Fire		365	45	75	37
##	261	241	Miltank	Normal		490	95	80	105
##	262	242	Blissey	Normal		540	255	10	10
##	263	243	Raikou	Electric		580	90	85	75
##	264	244	Entei	Fire		580	115	115	85
##	265	245	Suicune	Water		580	100	75	115
##	266	246	Larvitar	Rock	Ground	300	50	64	50
##	267	247	Pupitar	Rock	Ground	410	70	84	70
##	268	248	Tyranitar	Rock	Dark	600	100	134	110
##	269	248	TyranitarMega Tyranitar	Rock	Dark	700	100	164	150
##	270	249	Lugia	Psychic	Flying	680	106	90	130
##	271	250	Ho-oh	Fire	Flying	680	106	130	90
##	272	251	Celebi	Psychic	Grass	600	100	100	100
##	273	252	Treecko	Grass		310	40	45	35
##	274	253	Grovyle	Grass		405	50	65	45
##	275	254	Sceptile	Grass		530	70	85	65
##	276	254	SceptileMega Sceptile	Grass	Dragon	630	70	110	75
##	277	255	Torchic	Fire		310	45	60	40
##	278	256	Combusken	Fire	Fighting	405	60	85	60
##	279	257	Blaziken	Fire	Fighting	530	80	120	70
##	280	257	BlazikenMega Blaziken	Fire	Fighting	630	80	160	80
##	281	258	Mudkip	Water		310	50	70	50
##	282	259	Marshtomp	Water	Ground	405	70	85	70
##	283	260	Swampert	Water	Ground	535	100	110	90
##	284	260	SwampertMega Swampert	Water	Ground	635	100	150	110
##	285	261	Poochyena	Dark		220	35	55	35
##	286	262	Mightyena	Dark		420	70	90	70
##	287	263	Zigzagoon	Normal		240	38	30	41
##	288	264	Linoone	Normal		420	78	70	61
##	289	265	Wurmple	Bug		195	45	45	35
##	290	266	Silcoon	Bug		205	50	35	55
##	291	267	Beautifly	Bug	Flying	395	60	70	50
##	292	268	Cascoon	Bug		205	50	35	55
##	293	269	Dustox	Bug	Poison	385	60	50	70
##	294	270	Lotad	Water	Grass	220	40	30	30
##	295	271	Lombre	Water	Grass	340	60	50	50
##	296	272	Ludicolo	Water	Grass	480	80	70	70
##	297	273	Seedot	Grass		220	40	40	50
##	298	274	Nuzleaf	Grass	Dark	340	70	70	40
##	299	275	Shiftry	Grass	Dark	480	90	100	60
##	300	276	Tailow	Normal	Flying	270	40	55	30
##	301	277	Swellow	Normal	Flying	430	60	85	60
##	302	278	Wingull	Water	Flying	270	40	30	30
##	303	279	Pelipper	Water	Flying	430	60	50	100
##	304	280	Ralts	Psychic	Fairy	198	28	25	25
##	305	281	Kirlia	Psychic	Fairy	278	38	35	35
##	306	282	Gardevoir	Psychic	Fairy	518	68	65	65

##	307	282	GardevoirMega	Gardevoir	Psychic	Fairy	618	68	85	65
##	308	283		Surskit	Bug	Water	269	40	30	32
##	309	284		Masquerain	Bug	Flying	414	70	60	62
##	310	285		Shroomish	Grass		295	60	40	60
##	311	286		Breloom	Grass	Fighting	460	60	130	80
##	312	287		Slakoth	Normal		280	60	60	60
##	313	288		Vigoroth	Normal		440	80	80	80
##	314	289		Slaking	Normal		670	150	160	100
##	315	290		Nincada	Bug	Ground	266	31	45	90
##	316	291		Ninjask	Bug	Flying	456	61	90	45
##	317	292		Shedinja	Bug	Ghost	236	1	90	45
##	318	293		Whismur	Normal		240	64	51	23
##	319	294		Loudred	Normal		360	84	71	43
##	320	295		Exploud	Normal		490	104	91	63
##	321	296		Makuhita	Fighting		237	72	60	30
##	322	297		Hariyama	Fighting		474	144	120	60
##	323	298		Azurill	Normal	Fairy	190	50	20	40
##	324	299		Nosepass	Rock		375	30	45	135
##	325	300		Skitty	Normal		260	50	45	45
##	326	301		Delcatty	Normal		380	70	65	65
##	327	302		Sableye	Dark	Ghost	380	50	75	75
##	328	302	SableyeMega	Sableye	Dark	Ghost	480	50	85	125
##	329	303		Mawile	Steel	Fairy	380	50	85	85
##	330	303	MawileMega	Mawile	Steel	Fairy	480	50	105	125
##	331	304		Aron	Steel	Rock	330	50	70	100
##	332	305		Lairon	Steel	Rock	430	60	90	140
##	333	306		Aggron	Steel	Rock	530	70	110	180
##	334	306	AggronMega	Aggron	Steel		630	70	140	230
##	335	307		Meditite	Fighting	Psychic	280	30	40	55
##	336	308		Medicham	Fighting	Psychic	410	60	60	75
##	337	308	MedichamMega	Medicham	Fighting	Psychic	510	60	100	85
##	338	309		Electrike	Electric		295	40	45	40
##	339	310		Manectric	Electric		475	70	75	60
##	340	310	ManectricMega	Manectric	Electric		575	70	75	80
##	341	311		Plusle	Electric		405	60	50	40
##	342	312		Minun	Electric		405	60	40	50
##	343	313		Volbeat	Bug		400	65	73	55
##	344	314		Illumise	Bug		400	65	47	55
##	345	315		Roselia	Grass	Poison	400	50	60	45
##	346	316		Gulpin	Poison		302	70	43	53
##	347	317		Swalot	Poison		467	100	73	83
##	348	318		Carvanha	Water	Dark	305	45	90	20
##	349	319		Sharpedo	Water	Dark	460	70	120	40
##	350	319	SharpedoMega	Sharpedo	Water	Dark	560	70	140	70
##	351	320		Wailmer	Water		400	130	70	35
##	352	321		Wailord	Water		500	170	90	45
##	353	322		Numel	Fire	Ground	305	60	60	40
##	354	323		Camerupt	Fire	Ground	460	70	100	70
##	355	323	CameruptMega	Camerupt	Fire	Ground	560	70	120	100
##	356	324		Torkoal	Fire		470	70	85	140
##	357	325		Spoink	Psychic		330	60	25	35
##	358	326		Grumpig	Psychic		470	80	45	65
##	359	327		Spinda	Normal		360	60	60	60
##	360	328		Trapinch	Ground		290	45	100	45

##	361	329	Vibrava	Ground	Dragon	340	50	70	50
##	362	330	Flygon	Ground	Dragon	520	80	100	80
##	363	331	Cacnea	Grass		335	50	85	40
##	364	332	Cacturne	Grass	Dark	475	70	115	60
##	365	333	Swablu	Normal	Flying	310	45	40	60
##	366	334	Altaria	Dragon	Flying	490	75	70	90
##	367	334	AltariaMega Altaria	Dragon	Fairy	590	75	110	110
##	368	335	Zangoose	Normal		458	73	115	60
##	369	336	Seviper	Poison		458	73	100	60
##	370	337	Lunatone	Rock	Psychic	440	70	55	65
##	371	338	Solrock	Rock	Psychic	440	70	95	85
##	372	339	Barboach	Water	Ground	288	50	48	43
##	373	340	Whiscash	Water	Ground	468	110	78	73
##	374	341	Corphish	Water		308	43	80	65
##	375	342	Crawdaunt	Water	Dark	468	63	120	85
##	376	343	Baltoy	Ground	Psychic	300	40	40	55
##	377	344	Claydol	Ground	Psychic	500	60	70	105
##	378	345	Lileep	Rock	Grass	355	66	41	77
##	379	346	Cradily	Rock	Grass	495	86	81	97
##	380	347	Anorith	Rock	Bug	355	45	95	50
##	381	348	Armaldo	Rock	Bug	495	75	125	100
##	382	349	Feebas	Water		200	20	15	20
##	383	350	Milotic	Water		540	95	60	79
##	384	351	Castform	Normal		420	70	70	70
##	385	352	Kecleon	Normal		440	60	90	70
##	386	353	Shuppet	Ghost		295	44	75	35
##	387	354	Banette	Ghost		455	64	115	65
##	388	354	BanetteMega Banette	Ghost		555	64	165	75
##	389	355	Duskull	Ghost		295	20	40	90
##	390	356	Dusclops	Ghost		455	40	70	130
##	391	357	Tropius	Grass	Flying	460	99	68	83
##	392	358	Chimecho	Psychic		425	65	50	70
##	393	359	Absol	Dark		465	65	130	60
##	394	359	AbsolMega Absol	Dark		565	65	150	60
##	395	360	Wynaut	Psychic		260	95	23	48
##	396	361	Snorunt	Ice		300	50	50	50
##	397	362	Glalie	Ice		480	80	80	80
##	398	362	GlalieMega Glalie	Ice		580	80	120	80
##	399	363	Spheal	Ice	Water	290	70	40	50
##	400	364	Sealeo	Ice	Water	410	90	60	70
##	401	365	Walrein	Ice	Water	530	110	80	90
##	402	366	Clamperl	Water		345	35	64	85
##	403	367	Huntail	Water		485	55	104	105
##	404	368	Gorebyss	Water		485	55	84	105
##	405	369	Relicanth	Water	Rock	485	100	90	130
##	406	370	Luvdisc	Water		330	43	30	55
##	407	371	Bagon	Dragon		300	45	75	60
##	408	372	Shelgon	Dragon		420	65	95	100
##	409	373	Salamence	Dragon	Flying	600	95	135	80
##	410	373	SalamenceMega Salamence	Dragon	Flying	700	95	145	130
##	411	374	Beldum	Steel	Psychic	300	40	55	80
##	412	375	Metang	Steel	Psychic	420	60	75	100
##	413	376	Metagross	Steel	Psychic	600	80	135	130
##	414	376	MetagrossMega Metagross	Steel	Psychic	700	80	145	150

##	415	377	Regirock	Rock	580	80	100	200
##	416	378	Regice	Ice	580	80	50	100
##	417	379	Registeel	Steel	580	80	75	150
##	418	380	Latias	Dragon Psychic	600	80	80	90
##	419	380	LatiasMega Latias	Dragon Psychic	700	80	100	120
##	420	381	Latos	Dragon Psychic	600	80	90	80
##	421	381	LatosMega Latios	Dragon Psychic	700	80	130	100
##	422	382	Kyogre	Water	670	100	100	90
##	423	382	KyogrePrimal Kyogre	Water	770	100	150	90
##	424	383	Groudon	Ground	670	100	150	140
##	425	383	GroudonPrimal Groudon	Ground Fire	770	100	180	160
##	426	384	Rayquaza	Dragon Flying	680	105	150	90
##	427	384	RayquazaMega Rayquaza	Dragon Flying	780	105	180	100
##	428	385	Jirachi	Steel Psychic	600	100	100	100
##	429	386	DeoxysNormal Forme	Psychic	600	50	150	50
##	430	386	DeoxysAttack Forme	Psychic	600	50	180	20
##	431	386	DeoxysDefense Forme	Psychic	600	50	70	160
##	432	386	DeoxysSpeed Forme	Psychic	600	50	95	90
##	433	387	Turtwig	Grass	318	55	68	64
##	434	388	Grotle	Grass	405	75	89	85
##	435	389	Torterra	Grass Ground	525	95	109	105
##	436	390	Chimchar	Fire	309	44	58	44
##	437	391	Monferno	Fire Fighting	405	64	78	52
##	438	392	Infernape	Fire Fighting	534	76	104	71
##	439	393	Piplup	Water	314	53	51	53
##	440	394	Prinplup	Water	405	64	66	68
##	441	395	Empoleon	Water Steel	530	84	86	88
##	442	396	Starly	Normal Flying	245	40	55	30
##	443	397	Staravia	Normal Flying	340	55	75	50
##	444	398	Staraptor	Normal Flying	485	85	120	70
##	445	399	Bidoof	Normal	250	59	45	40
##	446	400	Bibarel	Normal Water	410	79	85	60
##	447	401	Kricketot	Bug	194	37	25	41
##	448	402	Kricketune	Bug	384	77	85	51
##	449	403	Shinx	Electric	263	45	65	34
##	450	404	Luxio	Electric	363	60	85	49
##	451	405	Luxray	Electric	523	80	120	79
##	452	406	Budew	Grass Poison	280	40	30	35
##	453	407	Roserade	Grass Poison	515	60	70	65
##	454	408	Cranidos	Rock	350	67	125	40
##	455	409	Rampardos	Rock	495	97	165	60
##	456	410	Shieldon	Rock Steel	350	30	42	118
##	457	411	Bastiodon	Rock Steel	495	60	52	168
##	458	412	Burmy	Bug	224	40	29	45
##	459	413	WormadamPlant Cloak	Bug Grass	424	60	59	85
##	460	413	WormadamSandy Cloak	Bug Ground	424	60	79	105
##	461	413	WormadamTrash Cloak	Bug Steel	424	60	69	95
##	462	414	Mothim	Bug Flying	424	70	94	50
##	463	415	Combee	Bug Flying	244	30	30	42
##	464	416	Vespiquen	Bug Flying	474	70	80	102
##	465	417	Pachirisu	Electric	405	60	45	70
##	466	418	Buizel	Water	330	55	65	35
##	467	419	Floatzel	Water	495	85	105	55
##	468	420	Cherubi	Grass	275	45	35	45

##	469	421	Cherrim	Grass		450	70	60	70
##	470	422	Shellos	Water		325	76	48	48
##	471	423	Gastrodon	Water	Ground	475	111	83	68
##	472	424	Ambipom	Normal		482	75	100	66
##	473	425	Drifloon	Ghost	Flying	348	90	50	34
##	474	426	Drifblim	Ghost	Flying	498	150	80	44
##	475	427	Buneary	Normal		350	55	66	44
##	476	428	Lopunny	Normal		480	65	76	84
##	477	428	LopunnyMega Lopunny	Normal	Fighting	580	65	136	94
##	478	429	Mismagius	Ghost		495	60	60	60
##	479	430	Honchkrow	Dark	Flying	505	100	125	52
##	480	431	Glameow	Normal		310	49	55	42
##	481	432	Purugly	Normal		452	71	82	64
##	482	433	Chingling	Psychic		285	45	30	50
##	483	434	Stunky	Poison	Dark	329	63	63	47
##	484	435	Skuntank	Poison	Dark	479	103	93	67
##	485	436	Bronzor	Steel	Psychic	300	57	24	86
##	486	437	Bronzong	Steel	Psychic	500	67	89	116
##	487	438	Bonsly	Rock		290	50	80	95
##	488	439	Mime Jr.	Psychic	Fairy	310	20	25	45
##	489	440	Happiny	Normal		220	100	5	5
##	490	441	Chatot	Normal	Flying	411	76	65	45
##	491	442	Spiritomb	Ghost	Dark	485	50	92	108
##	492	443	Gible	Dragon	Ground	300	58	70	45
##	493	444	Gabite	Dragon	Ground	410	68	90	65
##	494	445	Garchomp	Dragon	Ground	600	108	130	95
##	495	445	GarchompMega Garchomp	Dragon	Ground	700	108	170	115
##	496	446	Munchlax	Normal		390	135	85	40
##	497	447	Riolu	Fighting		285	40	70	40
##	498	448	Lucario	Fighting	Steel	525	70	110	70
##	499	448	LucarioMega Lucario	Fighting	Steel	625	70	145	88
##	500	449	Hippopotas	Ground		330	68	72	78
##	501	450	Hippowdon	Ground		525	108	112	118
##	502	451	Skorupi	Poison	Bug	330	40	50	90
##	503	452	Drapion	Poison	Dark	500	70	90	110
##	504	453	Croagunk	Poison	Fighting	300	48	61	40
##	505	454	Toxicroak	Poison	Fighting	490	83	106	65
##	506	455	Carnivine	Grass		454	74	100	72
##	507	456	Finneon	Water		330	49	49	56
##	508	457	Lumineon	Water		460	69	69	76
##	509	458	Mantyke	Water	Flying	345	45	20	50
##	510	459	Snover	Grass	Ice	334	60	62	50
##	511	460	Abomasnow	Grass	Ice	494	90	92	75
##	512	460	AbomasnowMega Abomasnow	Grass	Ice	594	90	132	105
##	513	461	Weavile	Dark	Ice	510	70	120	65
##	514	462	Magnezone	Electric	Steel	535	70	70	115
##	515	463	Lickilicky	Normal		515	110	85	95
##	516	464	Rhyperior	Ground	Rock	535	115	140	130
##	517	465	Tangrowth	Grass		535	100	100	125
##	518	466	Electivire	Electric		540	75	123	67
##	519	467	Magmortar	Fire		540	75	95	67
##	520	468	Togekiss	Fairy	Flying	545	85	50	95
##	521	469	Yanmega	Bug	Flying	515	86	76	86
##	522	470	Leafeon	Grass		525	65	110	130

##	523	471	Glaceon	Ice		525	65	60	110
##	524	472	Gliscor	Ground	Flying	510	75	95	125
##	525	473	Mamoswine	Ice	Ground	530	110	130	80
##	526	474	Porygon-Z	Normal		535	85	80	70
##	527	475	Gallade	Psychic	Fighting	518	68	125	65
##	528	475	GalladeMega Gallade	Psychic	Fighting	618	68	165	95
##	529	476	Probopass	Rock	Steel	525	60	55	145
##	530	477	Dusknoir	Ghost		525	45	100	135
##	531	478	Frosllass	Ice	Ghost	480	70	80	70
##	532	479	Rotom	Electric	Ghost	440	50	50	77
##	533	479	RotomHeat Rotom	Electric	Fire	520	50	65	107
##	534	479	RotomWash Rotom	Electric	Water	520	50	65	107
##	535	479	RotomFrost Rotom	Electric	Ice	520	50	65	107
##	536	479	RotomFan Rotom	Electric	Flying	520	50	65	107
##	537	479	RotomMow Rotom	Electric	Grass	520	50	65	107
##	538	480	Uxie	Psychic		580	75	75	130
##	539	481	Mesprit	Psychic		580	80	105	105
##	540	482	Azelf	Psychic		580	75	125	70
##	541	483	Dialga	Steel	Dragon	680	100	120	120
##	542	484	Palkia	Water	Dragon	680	90	120	100
##	543	485	Heatran	Fire	Steel	600	91	90	106
##	544	486	Regigigas	Normal		670	110	160	110
##	545	487	GiratinaAltered Forme	Ghost	Dragon	680	150	100	120
##	546	487	GiratinaOrigin Forme	Ghost	Dragon	680	150	120	100
##	547	488	Cresselia	Psychic		600	120	70	120
##	548	489	Phione	Water		480	80	80	80
##	549	490	Manaphy	Water		600	100	100	100
##	550	491	Darkrai	Dark		600	70	90	90
##	551	492	ShayminLand Forme	Grass		600	100	100	100
##	552	492	ShayminSky Forme	Grass	Flying	600	100	103	75
##	553	493	Arceus	Normal		720	120	120	120
##	554	494	Victini	Psychic	Fire	600	100	100	100
##	555	495	Snivy	Grass		308	45	45	55
##	556	496	Servine	Grass		413	60	60	75
##	557	497	Serperior	Grass		528	75	75	95
##	558	498	Tepig	Fire		308	65	63	45
##	559	499	Pignite	Fire	Fighting	418	90	93	55
##	560	500	Emboar	Fire	Fighting	528	110	123	65
##	561	501	Oshawott	Water		308	55	55	45
##	562	502	Dewott	Water		413	75	75	60
##	563	503	Samurott	Water		528	95	100	85
##	564	504	Patrat	Normal		255	45	55	39
##	565	505	Watchog	Normal		420	60	85	69
##	566	506	Lillipup	Normal		275	45	60	45
##	567	507	Herdier	Normal		370	65	80	65
##	568	508	Stoutland	Normal		500	85	110	90
##	569	509	Purrloin	Dark		281	41	50	37
##	570	510	Liepard	Dark		446	64	88	50
##	571	511	Pansage	Grass		316	50	53	48
##	572	512	Simisage	Grass		498	75	98	63
##	573	513	Pansear	Fire		316	50	53	48
##	574	514	Simisear	Fire		498	75	98	63
##	575	515	Panpour	Water		316	50	53	48
##	576	516	Simipour	Water		498	75	98	63

##	577	517	Munna	Psychic		292	76	25	45
##	578	518	Musharna	Psychic		487	116	55	85
##	579	519	Pidove	Normal	Flying	264	50	55	50
##	580	520	Tranquill	Normal	Flying	358	62	77	62
##	581	521	Unfezant	Normal	Flying	488	80	115	80
##	582	522	Blitzle	Electric		295	45	60	32
##	583	523	Zebstrika	Electric		497	75	100	63
##	584	524	Roggenrola	Rock		280	55	75	85
##	585	525	Boldore	Rock		390	70	105	105
##	586	526	Gigalith	Rock		515	85	135	130
##	587	527	Woobat	Psychic	Flying	313	55	45	43
##	588	528	Swoobat	Psychic	Flying	425	67	57	55
##	589	529	Drilbur	Ground		328	60	85	40
##	590	530	Excadrill	Ground	Steel	508	110	135	60
##	591	531	Audino	Normal		445	103	60	86
##	592	531	AudinoMega Audino	Normal	Fairy	545	103	60	126
##	593	532	Timburr	Fighting		305	75	80	55
##	594	533	Gurdurr	Fighting		405	85	105	85
##	595	534	Conkeldurr	Fighting		505	105	140	95
##	596	535	Tympole	Water		294	50	50	40
##	597	536	Palpitoad	Water	Ground	384	75	65	55
##	598	537	Seismitoad	Water	Ground	509	105	95	75
##	599	538	Throh	Fighting		465	120	100	85
##	600	539	Sawk	Fighting		465	75	125	75
##	601	540	Sewaddle	Bug	Grass	310	45	53	70
##	602	541	Swadloon	Bug	Grass	380	55	63	90
##	603	542	Leavanny	Bug	Grass	500	75	103	80
##	604	543	Venipede	Bug	Poison	260	30	45	59
##	605	544	Whirlipede	Bug	Poison	360	40	55	99
##	606	545	Scolipede	Bug	Poison	485	60	100	89
##	607	546	Cottonee	Grass	Fairy	280	40	27	60
##	608	547	Whimsicott	Grass	Fairy	480	60	67	85
##	609	548	Petilil	Grass		280	45	35	50
##	610	549	Lilligant	Grass		480	70	60	75
##	611	550	Basculin	Water		460	70	92	65
##	612	551	Sandile	Ground	Dark	292	50	72	35
##	613	552	Krokorok	Ground	Dark	351	60	82	45
##	614	553	Krookodile	Ground	Dark	519	95	117	80
##	615	554	Darumaka	Fire		315	70	90	45
##	616	555	DarmanitanStandard Mode	Fire		480	105	140	55
##	617	555	DarmanitanZen Mode	Fire	Psychic	540	105	30	105
##	618	556	Maractus	Grass		461	75	86	67
##	619	557	Dwebble	Bug	Rock	325	50	65	85
##	620	558	Crustle	Bug	Rock	475	70	95	125
##	621	559	Scraggy	Dark	Fighting	348	50	75	70
##	622	560	Scrafty	Dark	Fighting	488	65	90	115
##	623	561	Sigilyph	Psychic	Flying	490	72	58	80
##	624	562	Yamask	Ghost		303	38	30	85
##	625	563	Cofagrigus	Ghost		483	58	50	145
##	626	564	Tirtouga	Water	Rock	355	54	78	103
##	627	565	Carracosta	Water	Rock	495	74	108	133
##	628	566	Archen	Rock	Flying	401	55	112	45
##	629	567	Archeops	Rock	Flying	567	75	140	65
##	630	568	Trubbish	Poison		329	50	50	62

## 631 569	Garbodor	Poison		474	80	95	82
## 632 570	Zorua	Dark		330	40	65	40
## 633 571	Zoroark	Dark		510	60	105	60
## 634 572	Minccino	Normal		300	55	50	40
## 635 573	Cinccino	Normal		470	75	95	60
## 636 574	Gothita	Psychic		290	45	30	50
## 637 575	Gothorita	Psychic		390	60	45	70
## 638 576	Gothitelle	Psychic		490	70	55	95
## 639 577	Solosis	Psychic		290	45	30	40
## 640 578	Duosion	Psychic		370	65	40	50
## 641 579	Reuniclus	Psychic		490	110	65	75
## 642 580	Ducklett	Water	Flying	305	62	44	50
## 643 581	Swanna	Water	Flying	473	75	87	63
## 644 582	Vanillite	Ice		305	36	50	50
## 645 583	Vanillish	Ice		395	51	65	65
## 646 584	Vanilluxe	Ice		535	71	95	85
## 647 585	Deerling	Normal	Grass	335	60	60	50
## 648 586	Sawsbuck	Normal	Grass	475	80	100	70
## 649 587	Emolga	Electric	Flying	428	55	75	60
## 650 588	Karrablast	Bug		315	50	75	45
## 651 589	Escavalier	Bug	Steel	495	70	135	105
## 652 590	Foongus	Grass	Poison	294	69	55	45
## 653 591	Amoonguss	Grass	Poison	464	114	85	70
## 654 592	Frillish	Water	Ghost	335	55	40	50
## 655 593	Jellicent	Water	Ghost	480	100	60	70
## 656 594	Alomomola	Water		470	165	75	80
## 657 595	Joltik	Bug	Electric	319	50	47	50
## 658 596	Galvantula	Bug	Electric	472	70	77	60
## 659 597	Ferroseed	Grass	Steel	305	44	50	91
## 660 598	Ferrothorn	Grass	Steel	489	74	94	131
## 661 599	Klink	Steel		300	40	55	70
## 662 600	Klang	Steel		440	60	80	95
## 663 601	Klinklang	Steel		520	60	100	115
## 664 602	Tynamo	Electric		275	35	55	40
## 665 603	Eelektrik	Electric		405	65	85	70
## 666 604	Eelektross	Electric		515	85	115	80
## 667 605	Elgyem	Psychic		335	55	55	55
## 668 606	Beheeyem	Psychic		485	75	75	75
## 669 607	Litwick	Ghost	Fire	275	50	30	55
## 670 608	Lampent	Ghost	Fire	370	60	40	60
## 671 609	Chandelure	Ghost	Fire	520	60	55	90
## 672 610	Axew	Dragon		320	46	87	60
## 673 611	Fraxure	Dragon		410	66	117	70
## 674 612	Haxorus	Dragon		540	76	147	90
## 675 613	Cubchoo	Ice		305	55	70	40
## 676 614	Beartic	Ice		485	95	110	80
## 677 615	Cryogonal	Ice		485	70	50	30
## 678 616	Shelmet	Bug		305	50	40	85
## 679 617	Accelgor	Bug		495	80	70	40
## 680 618	Stunfisk	Ground	Electric	471	109	66	84
## 681 619	Mienfoo	Fighting		350	45	85	50
## 682 620	Mienshao	Fighting		510	65	125	60
## 683 621	Druddigon	Dragon		485	77	120	90
## 684 622	Golett	Ground	Ghost	303	59	74	50

## 685 623	Golurk	Ground	Ghost	483	89	124	80
## 686 624	Pawniard	Dark	Steel	340	45	85	70
## 687 625	Bisharp	Dark	Steel	490	65	125	100
## 688 626	Bouffalant	Normal		490	95	110	95
## 689 627	Rufflet	Normal	Flying	350	70	83	50
## 690 628	Braviary	Normal	Flying	510	100	123	75
## 691 629	Vullaby	Dark	Flying	370	70	55	75
## 692 630	Mandibuzz	Dark	Flying	510	110	65	105
## 693 631	Heatmor	Fire		484	85	97	66
## 694 632	Durant	Bug	Steel	484	58	109	112
## 695 633	Deino	Dark	Dragon	300	52	65	50
## 696 634	Zweilous	Dark	Dragon	420	72	85	70
## 697 635	Hydreigon	Dark	Dragon	600	92	105	90
## 698 636	Larvesta	Bug	Fire	360	55	85	55
## 699 637	Volcarona	Bug	Fire	550	85	60	65
## 700 638	Cobalion	Steel	Fighting	580	91	90	129
## 701 639	Terrakion	Rock	Fighting	580	91	129	90
## 702 640	Virizion	Grass	Fighting	580	91	90	72
## 703 641	TornadusIncarnate Forme	Flying		580	79	115	70
## 704 641	TornadusTherian Forme	Flying		580	79	100	80
## 705 642	ThundurusIncarnate Forme	Electric	Flying	580	79	115	70
## 706 642	ThundurusTherian Forme	Electric	Flying	580	79	105	70
## 707 643	Reshiram	Dragon	Fire	680	100	120	100
## 708 644	Zekrom	Dragon	Electric	680	100	150	120
## 709 645	LandorusIncarnate Forme	Ground	Flying	600	89	125	90
## 710 645	LandorusTherian Forme	Ground	Flying	600	89	145	90
## 711 646	Kyurem	Dragon	Ice	660	125	130	90
## 712 646	KyuremBlack Kyurem	Dragon	Ice	700	125	170	100
## 713 646	KyuremWhite Kyurem	Dragon	Ice	700	125	120	90
## 714 647	KeldeoOrdinary Forme	Water	Fighting	580	91	72	90
## 715 647	KeldeoResolute Forme	Water	Fighting	580	91	72	90
## 716 648	MeloettaAria Forme	Normal	Psychic	600	100	77	77
## 717 648	MeloettaPirouette Forme	Normal	Fighting	600	100	128	90
## 718 649	Genesect	Bug	Steel	600	71	120	95
## 719 650	Chespin	Grass		313	56	61	65
## 720 651	Quilladin	Grass		405	61	78	95
## 721 652	Chesnaught	Grass	Fighting	530	88	107	122
## 722 653	Fennekin	Fire		307	40	45	40
## 723 654	Braixen	Fire		409	59	59	58
## 724 655	Delphox	Fire	Psychic	534	75	69	72
## 725 656	Froakie	Water		314	41	56	40
## 726 657	Frogadier	Water		405	54	63	52
## 727 658	Greninja	Water	Dark	530	72	95	67
## 728 659	Bunnelby	Normal		237	38	36	38
## 729 660	Diggersby	Normal	Ground	423	85	56	77
## 730 661	Fletchling	Normal	Flying	278	45	50	43
## 731 662	Fletchinder	Fire	Flying	382	62	73	55
## 732 663	Talonflame	Fire	Flying	499	78	81	71
## 733 664	Scatterbug	Bug		200	38	35	40
## 734 665	Spewpa	Bug		213	45	22	60
## 735 666	Vivillon	Bug	Flying	411	80	52	50
## 736 667	Litleo	Fire	Normal	369	62	50	58
## 737 668	Pyroar	Fire	Normal	507	86	68	72
## 738 669	FlabÃ©bÃ©	Fairy		303	44	38	39

## 739 670	Floette	Fairy		371	54	45	47
## 740 671	Florges	Fairy		552	78	65	68
## 741 672	Skiddo	Grass		350	66	65	48
## 742 673	Gogoat	Grass		531	123	100	62
## 743 674	Pancham	Fighting		348	67	82	62
## 744 675	Pangoro	Fighting	Dark	495	95	124	78
## 745 676	Furfrou	Normal		472	75	80	60
## 746 677	Espurr	Psychic		355	62	48	54
## 747 678	MeowsticMale	Psychic		466	74	48	76
## 748 678	MeowsticFemale	Psychic		466	74	48	76
## 749 679	Honedge	Steel	Ghost	325	45	80	100
## 750 680	Doublade	Steel	Ghost	448	59	110	150
## 751 681	AegislashBlade Forme	Steel	Ghost	520	60	150	50
## 752 681	AegislashShield Forme	Steel	Ghost	520	60	50	150
## 753 682	Spritzee	Fairy		341	78	52	60
## 754 683	Aromatisse	Fairy		462	101	72	72
## 755 684	Swirlix	Fairy		341	62	48	66
## 756 685	Slurpuff	Fairy		480	82	80	86
## 757 686	Inkay	Dark	Psychic	288	53	54	53
## 758 687	Malamar	Dark	Psychic	482	86	92	88
## 759 688	Binacle	Rock	Water	306	42	52	67
## 760 689	Barbaracle	Rock	Water	500	72	105	115
## 761 690	Skrelep	Poison	Water	320	50	60	60
## 762 691	Dragalge	Poison	Dragon	494	65	75	90
## 763 692	Clauncher	Water		330	50	53	62
## 764 693	Clawitzer	Water		500	71	73	88
## 765 694	Helioptile	Electric	Normal	289	44	38	33
## 766 695	Heliolisk	Electric	Normal	481	62	55	52
## 767 696	Tyrunt	Rock	Dragon	362	58	89	77
## 768 697	Tyrantrum	Rock	Dragon	521	82	121	119
## 769 698	Amaura	Rock	Ice	362	77	59	50
## 770 699	Aurorus	Rock	Ice	521	123	77	72
## 771 700	Sylveon	Fairy		525	95	65	65
## 772 701	Hawlucha	Fighting	Flying	500	78	92	75
## 773 702	Dedenne	Electric	Fairy	431	67	58	57
## 774 703	Carbink	Rock	Fairy	500	50	50	150
## 775 704	Goomy	Dragon		300	45	50	35
## 776 705	Sliggoo	Dragon		452	68	75	53
## 777 706	Goodra	Dragon		600	90	100	70
## 778 707	Klefki	Steel	Fairy	470	57	80	91
## 779 708	Phantump	Ghost	Grass	309	43	70	48
## 780 709	Trevenant	Ghost	Grass	474	85	110	76
## 781 710	PumpkabooAverage Size	Ghost	Grass	335	49	66	70
## 782 710	PumpkabooSmall Size	Ghost	Grass	335	44	66	70
## 783 710	PumpkabooLarge Size	Ghost	Grass	335	54	66	70
## 784 710	PumpkabooSuper Size	Ghost	Grass	335	59	66	70
## 785 711	GourgeistAverage Size	Ghost	Grass	494	65	90	122
## 786 711	GourgeistSmall Size	Ghost	Grass	494	55	85	122
## 787 711	GourgeistLarge Size	Ghost	Grass	494	75	95	122
## 788 711	GourgeistSuper Size	Ghost	Grass	494	85	100	122
## 789 712	Bergmite	Ice		304	55	69	85
## 790 713	Avalugg	Ice		514	95	117	184
## 791 714	Noibat	Flying	Dragon	245	40	30	35
## 792 715	Noivern	Flying	Dragon	535	85	70	80

## 793 716		Xerneas	Fairy		680	126	131	95
## 794 717		Yveltal	Dark	Flying	680	126	131	95
## 795 718		Zygarde50% Forme	Dragon	Ground	600	108	100	121
## 796 719		Diancie	Rock	Fairy	600	50	100	150
## 797 719		DiancieMega Diancie	Rock	Fairy	700	50	160	110
## 798 720		HoopaHoopa Confined	Psychic	Ghost	600	80	110	60
## 799 720		HoopaHoopa Unbound	Psychic	Dark	680	80	160	60
## 800 721		Volcanion	Fire	Water	600	80	110	120
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```
Pokemon <- Pokemon %>%
  clean_names()
Pokemon
```

##	x	name	type_1	type_2	total	hp	attack	defense	
## 1	1	Bulbasaur	Grass	Poison	318	45	49	49	
## 2	2	Ivysaur	Grass	Poison	405	60	62	63	
## 3	3	Venusaur	Grass	Poison	525	80	82	83	
## 4	3	VenusaurMega Venusaur	Grass	Poison	625	80	100	123	
## 5	4	Charmander	Fire		309	39	52	43	
## 6	5	Charmeleon	Fire		405	58	64	58	
## 7	6	Charizard	Fire	Flying	534	78	84	78	
## 8	6	CharizardMega Charizard X	Fire	Dragon	634	78	130	111	
## 9	6	CharizardMega Charizard Y	Fire	Flying	634	78	104	78	
## 10	7	Squirtle	Water		314	44	48	65	
## 11	8	Wartortle	Water		405	59	63	80	
## 12	9	Blastoise	Water		530	79	83	100	
## 13	9	BlastoiseMega Blastoise	Water		630	79	103	120	
## 14	10	Caterpie	Bug		195	45	30	35	
## 15	11	Metapod	Bug		205	50	20	55	
## 16	12	Butterfree	Bug	Flying	395	60	45	50	
## 17	13	Weedle	Bug	Poison	195	40	35	30	
## 18	14	Kakuna	Bug	Poison	205	45	25	50	
## 19	15	Beedrill	Bug	Poison	395	65	90	40	
## 20	15	BeedrillMega Beedrill	Bug	Poison	495	65	150	40	
## 21	16	Pidgey	Normal	Flying	251	40	45	40	
## 22	17	Pidgeotto	Normal	Flying	349	63	60	55	
## 23	18	Pidgeot	Normal	Flying	479	83	80	75	
## 24	18	PidgeotMega Pidgeot	Normal	Flying	579	83	80	80	
## 25	19	Rattata	Normal		253	30	56	35	
## 26	20	Raticate	Normal		413	55	81	60	
## 27	21	Spearow	Normal	Flying	262	40	60	30	
## 28	22	Fearow	Normal	Flying	442	65	90	65	
## 29	23	Ekans	Poison		288	35	60	44	
## 30	24	Arbok	Poison		438	60	85	69	
## 31	25	Pikachu	Electric		320	35	55	40	
## 32	26	Raichu	Electric		485	60	90	55	
## 33	27	Sandshrew	Ground		300	50	75	85	
## 34	28	Sandslash	Ground		450	75	100	110	
## 35	29	Nidoran♀\231\200	Poison			275	55	47	52
## 36	30	Nidorina	Poison		365	70	62	67	
## 37	31	Nidoqueen	Poison	Ground	505	90	92	87	
## 38	32	Nidoran♀\231,	Poison			273	46	57	40
## 39	33	Nidorino	Poison		365	61	72	57	
## 40	34	Nidoking	Poison	Ground	505	81	102	77	
## 41	35	Clefairy	Fairy		323	70	45	48	
## 42	36	Clefable	Fairy		483	95	70	73	
## 43	37	Vulpix	Fire		299	38	41	40	
## 44	38	Ninetales	Fire		505	73	76	75	
## 45	39	Jigglypuff	Normal	Fairy	270	115	45	20	
## 46	40	Wigglytuff	Normal	Fairy	435	140	70	45	
## 47	41	Zubat	Poison	Flying	245	40	45	35	
## 48	42	Golbat	Poison	Flying	455	75	80	70	

## 49	43	Oddish	Grass	Poison	320	45	50	55
## 50	44	Gloom	Grass	Poison	395	60	65	70
## 51	45	Vileplume	Grass	Poison	490	75	80	85
## 52	46	Paras	Bug	Grass	285	35	70	55
## 53	47	Parasect	Bug	Grass	405	60	95	80
## 54	48	Venonat	Bug	Poison	305	60	55	50
## 55	49	Venomoth	Bug	Poison	450	70	65	60
## 56	50	Diglett	Ground		265	10	55	25
## 57	51	Dugtrio	Ground		405	35	80	50
## 58	52	Meowth	Normal		290	40	45	35
## 59	53	Persian	Normal		440	65	70	60
## 60	54	Psyduck	Water		320	50	52	48
## 61	55	Golduck	Water		500	80	82	78
## 62	56	Mankey	Fighting		305	40	80	35
## 63	57	Primeape	Fighting		455	65	105	60
## 64	58	Growlithe	Fire		350	55	70	45
## 65	59	Arcanine	Fire		555	90	110	80
## 66	60	Poliwag	Water		300	40	50	40
## 67	61	Poliwhirl	Water		385	65	65	65
## 68	62	Poliwrath	Water	Fighting	510	90	95	95
## 69	63	Abra	Psychic		310	25	20	15
## 70	64	Kadabra	Psychic		400	40	35	30
## 71	65	Alakazam	Psychic		500	55	50	45
## 72	65	AlakazamMega	Alakazam	Psychic	590	55	50	65
## 73	66	Machop	Fighting		305	70	80	50
## 74	67	Machoke	Fighting		405	80	100	70
## 75	68	Machamp	Fighting		505	90	130	80
## 76	69	Bellsprout	Grass	Poison	300	50	75	35
## 77	70	Weepinbell	Grass	Poison	390	65	90	50
## 78	71	Victreebel	Grass	Poison	490	80	105	65
## 79	72	Tentacool	Water	Poison	335	40	40	35
## 80	73	Tentacruel	Water	Poison	515	80	70	65
## 81	74	Geodude	Rock	Ground	300	40	80	100
## 82	75	Graveler	Rock	Ground	390	55	95	115
## 83	76	Golem	Rock	Ground	495	80	120	130
## 84	77	Ponyta	Fire		410	50	85	55
## 85	78	Rapidash	Fire		500	65	100	70
## 86	79	Slowpoke	Water	Psychic	315	90	65	65
## 87	80	Slowbro	Water	Psychic	490	95	75	110
## 88	80	SlowbroMega	Slowbro	Water	590	95	75	180
## 89	81	Magnemite	Electric	Steel	325	25	35	70
## 90	82	Magneton	Electric	Steel	465	50	60	95
## 91	83	Farfetch'd	Normal	Flying	352	52	65	55
## 92	84	Doduo	Normal	Flying	310	35	85	45
## 93	85	Dodrio	Normal	Flying	460	60	110	70
## 94	86	Seel	Water		325	65	45	55
## 95	87	Dewgong	Water	Ice	475	90	70	80
## 96	88	Grimer	Poison		325	80	80	50
## 97	89	Muk	Poison		500	105	105	75
## 98	90	Shellder	Water		305	30	65	100
## 99	91	Cloyster	Water	Ice	525	50	95	180
## 100	92	Gastly	Ghost	Poison	310	30	35	30
## 101	93	Haunter	Ghost	Poison	405	45	50	45
## 102	94	Gengar	Ghost	Poison	500	60	65	60

##	103	94	Gengar	Mega Gengar	Ghost	Poison	600	60	65	80
##	104	95		Onix	Rock	Ground	385	35	45	160
##	105	96		Drowzee	Psychic		328	60	48	45
##	106	97		Hypno	Psychic		483	85	73	70
##	107	98		Krabby	Water		325	30	105	90
##	108	99		Kingler	Water		475	55	130	115
##	109	100		Voltorb	Electric		330	40	30	50
##	110	101		Electrode	Electric		480	60	50	70
##	111	102		Exeggcute	Grass	Psychic	325	60	40	80
##	112	103		Exeggutor	Grass	Psychic	520	95	95	85
##	113	104		Cubone	Ground		320	50	50	95
##	114	105		Marowak	Ground		425	60	80	110
##	115	106		Hitmonlee	Fighting		455	50	120	53
##	116	107		Hitmonchan	Fighting		455	50	105	79
##	117	108		Lickitung	Normal		385	90	55	75
##	118	109		Koffing	Poison		340	40	65	95
##	119	110		Weezing	Poison		490	65	90	120
##	120	111		Rhyhorn	Ground	Rock	345	80	85	95
##	121	112		Rhydon	Ground	Rock	485	105	130	120
##	122	113		Chansey	Normal		450	250	5	5
##	123	114		Tangela	Grass		435	65	55	115
##	124	115		Kangaskhan	Normal		490	105	95	80
##	125	115	Kangaskhan	Mega Kangaskhan	Normal		590	105	125	100
##	126	116		Horsea	Water		295	30	40	70
##	127	117		Seadra	Water		440	55	65	95
##	128	118		Goldeen	Water		320	45	67	60
##	129	119		Seaking	Water		450	80	92	65
##	130	120		Staryu	Water		340	30	45	55
##	131	121		Starmie	Water	Psychic	520	60	75	85
##	132	122		Mr. Mime	Psychic	Fairy	460	40	45	65
##	133	123		Scyther	Bug	Flying	500	70	110	80
##	134	124		Jynx	Ice	Psychic	455	65	50	35
##	135	125		Electabuzz	Electric		490	65	83	57
##	136	126		Magmar	Fire		495	65	95	57
##	137	127		Pinsir	Bug		500	65	125	100
##	138	127	Pinsir	Mega Pinsir	Bug	Flying	600	65	155	120
##	139	128		Tauros	Normal		490	75	100	95
##	140	129		Magikarp	Water		200	20	10	55
##	141	130		Gyarados	Water	Flying	540	95	125	79
##	142	130	Gyarados	Mega Gyarados	Water	Dark	640	95	155	109
##	143	131		Lapras	Water	Ice	535	130	85	80
##	144	132		Ditto	Normal		288	48	48	48
##	145	133		Eevee	Normal		325	55	55	50
##	146	134		Vaporeon	Water		525	130	65	60
##	147	135		Jolteon	Electric		525	65	65	60
##	148	136		Flareon	Fire		525	65	130	60
##	149	137		Porygon	Normal		395	65	60	70
##	150	138		Omanyte	Rock	Water	355	35	40	100
##	151	139		Omastar	Rock	Water	495	70	60	125
##	152	140		Kabuto	Rock	Water	355	30	80	90
##	153	141		Kabutops	Rock	Water	495	60	115	105
##	154	142		Aerodactyl	Rock	Flying	515	80	105	65
##	155	142	Aerodactyl	Mega Aerodactyl	Rock	Flying	615	80	135	85
##	156	143		Snorlax	Normal		540	160	110	65

## 157 144	Articuno	Ice	Flying	580	90	85	100
## 158 145	Zapdos	Electric	Flying	580	90	90	85
## 159 146	Moltres	Fire	Flying	580	90	100	90
## 160 147	Dratini	Dragon		300	41	64	45
## 161 148	Dragonair	Dragon		420	61	84	65
## 162 149	Dragonite	Dragon	Flying	600	91	134	95
## 163 150	Mewtwo	Psychic		680	106	110	90
## 164 150	MewtwoMega Mewtwo X	Psychic	Fighting	780	106	190	100
## 165 150	MewtwoMega Mewtwo Y	Psychic		780	106	150	70
## 166 151	Mew	Psychic		600	100	100	100
## 167 152	Chikorita	Grass		318	45	49	65
## 168 153	Bayleef	Grass		405	60	62	80
## 169 154	Meganium	Grass		525	80	82	100
## 170 155	Cyndaquil	Fire		309	39	52	43
## 171 156	Quilava	Fire		405	58	64	58
## 172 157	Typhlosion	Fire		534	78	84	78
## 173 158	Totodile	Water		314	50	65	64
## 174 159	Croconaw	Water		405	65	80	80
## 175 160	Feraligatr	Water		530	85	105	100
## 176 161	Sentret	Normal		215	35	46	34
## 177 162	Furret	Normal		415	85	76	64
## 178 163	Hoothoot	Normal	Flying	262	60	30	30
## 179 164	Noctowl	Normal	Flying	442	100	50	50
## 180 165	Ledyba	Bug	Flying	265	40	20	30
## 181 166	Ledian	Bug	Flying	390	55	35	50
## 182 167	Spinarak	Bug	Poison	250	40	60	40
## 183 168	Ariados	Bug	Poison	390	70	90	70
## 184 169	Crobat	Poison	Flying	535	85	90	80
## 185 170	Chinchou	Water	Electric	330	75	38	38
## 186 171	Lanturn	Water	Electric	460	125	58	58
## 187 172	Pichu	Electric		205	20	40	15
## 188 173	Cleffa	Fairy		218	50	25	28
## 189 174	Igglybuff	Normal	Fairy	210	90	30	15
## 190 175	Togepi	Fairy		245	35	20	65
## 191 176	Togetic	Fairy	Flying	405	55	40	85
## 192 177	Natu	Psychic	Flying	320	40	50	45
## 193 178	Xatu	Psychic	Flying	470	65	75	70
## 194 179	Mareep	Electric		280	55	40	40
## 195 180	Flaaffy	Electric		365	70	55	55
## 196 181	Ampharos	Electric		510	90	75	85
## 197 181	AmpharosMega Ampharos	Electric	Dragon	610	90	95	105
## 198 182	Bellossom	Grass		490	75	80	95
## 199 183	Marill	Water	Fairy	250	70	20	50
## 200 184	Azumarill	Water	Fairy	420	100	50	80
## 201 185	Sudowoodo	Rock		410	70	100	115
## 202 186	Politoed	Water		500	90	75	75
## 203 187	Hoppip	Grass	Flying	250	35	35	40
## 204 188	Skiploom	Grass	Flying	340	55	45	50
## 205 189	Jumpluff	Grass	Flying	460	75	55	70
## 206 190	Aipom	Normal		360	55	70	55
## 207 191	Sunkern	Grass		180	30	30	30
## 208 192	Sunflora	Grass		425	75	75	55
## 209 193	Yanma	Bug	Flying	390	65	65	45
## 210 194	Wooper	Water	Ground	210	55	45	45

##	211	195	Quagsire	Water	Ground	430	95	85	85
##	212	196	Espeon	Psychic		525	65	65	60
##	213	197	Umbreon	Dark		525	95	65	110
##	214	198	Murkrow	Dark	Flying	405	60	85	42
##	215	199	Slowking	Water	Psychic	490	95	75	80
##	216	200	Misdreavus	Ghost		435	60	60	60
##	217	201	Unown	Psychic		336	48	72	48
##	218	202	Wobbuffet	Psychic		405	190	33	58
##	219	203	Girafarig	Normal	Psychic	455	70	80	65
##	220	204	Pineco	Bug		290	50	65	90
##	221	205	Forretress	Bug	Steel	465	75	90	140
##	222	206	Dunsparce	Normal		415	100	70	70
##	223	207	Gligar	Ground	Flying	430	65	75	105
##	224	208	Steelix	Steel	Ground	510	75	85	200
##	225	208	SteelixMega Steelix	Steel	Ground	610	75	125	230
##	226	209	Snubbull	Fairy		300	60	80	50
##	227	210	Granbull	Fairy		450	90	120	75
##	228	211	Qwilfish	Water	Poison	430	65	95	75
##	229	212	Scizor	Bug	Steel	500	70	130	100
##	230	212	ScizorMega Scizor	Bug	Steel	600	70	150	140
##	231	213	Shuckle	Bug	Rock	505	20	10	230
##	232	214	Heracross	Bug	Fighting	500	80	125	75
##	233	214	HeracrossMega Heracross	Bug	Fighting	600	80	185	115
##	234	215	Sneasel	Dark	Ice	430	55	95	55
##	235	216	Teddiursa	Normal		330	60	80	50
##	236	217	Ursaring	Normal		500	90	130	75
##	237	218	Slugma	Fire		250	40	40	40
##	238	219	Magcargo	Fire	Rock	410	50	50	120
##	239	220	Swinub	Ice	Ground	250	50	50	40
##	240	221	Piloswine	Ice	Ground	450	100	100	80
##	241	222	Corsola	Water	Rock	380	55	55	85
##	242	223	Remoraid	Water		300	35	65	35
##	243	224	Octillery	Water		480	75	105	75
##	244	225	Delibird	Ice	Flying	330	45	55	45
##	245	226	Mantine	Water	Flying	465	65	40	70
##	246	227	Skarmory	Steel	Flying	465	65	80	140
##	247	228	Houndour	Dark	Fire	330	45	60	30
##	248	229	Houndoom	Dark	Fire	500	75	90	50
##	249	229	HoundoomMega Houndoom	Dark	Fire	600	75	90	90
##	250	230	Kingdra	Water	Dragon	540	75	95	95
##	251	231	Phanpy	Ground		330	90	60	60
##	252	232	Donphan	Ground		500	90	120	120
##	253	233	Porygon2	Normal		515	85	80	90
##	254	234	Stantler	Normal		465	73	95	62
##	255	235	Smeargle	Normal		250	55	20	35
##	256	236	Tyrogue	Fighting		210	35	35	35
##	257	237	Hitmontop	Fighting		455	50	95	95
##	258	238	Smoochum	Ice	Psychic	305	45	30	15
##	259	239	Elekid	Electric		360	45	63	37
##	260	240	Magby	Fire		365	45	75	37
##	261	241	Miltank	Normal		490	95	80	105
##	262	242	Blissey	Normal		540	255	10	10
##	263	243	Raikou	Electric		580	90	85	75
##	264	244	Entei	Fire		580	115	115	85

##	265	245	Suicune	Water		580	100	75	115
##	266	246	Larvitar	Rock	Ground	300	50	64	50
##	267	247	Pupitar	Rock	Ground	410	70	84	70
##	268	248	Tyranitar	Rock	Dark	600	100	134	110
##	269	248	TyranitarMega Tyranitar	Rock	Dark	700	100	164	150
##	270	249	Lugia	Psychic	Flying	680	106	90	130
##	271	250	Ho-oh	Fire	Flying	680	106	130	90
##	272	251	Celebi	Psychic	Grass	600	100	100	100
##	273	252	Treecko	Grass		310	40	45	35
##	274	253	Grovyle	Grass		405	50	65	45
##	275	254	Sceptile	Grass		530	70	85	65
##	276	254	SceptileMega Sceptile	Grass	Dragon	630	70	110	75
##	277	255	Torchic	Fire		310	45	60	40
##	278	256	Combusken	Fire	Fighting	405	60	85	60
##	279	257	Blaziken	Fire	Fighting	530	80	120	70
##	280	257	BlazikenMega Blaziken	Fire	Fighting	630	80	160	80
##	281	258	Mudkip	Water		310	50	70	50
##	282	259	Marshtomp	Water	Ground	405	70	85	70
##	283	260	Swampert	Water	Ground	535	100	110	90
##	284	260	SwampertMega Swampert	Water	Ground	635	100	150	110
##	285	261	Poochyena	Dark		220	35	55	35
##	286	262	Mightyena	Dark		420	70	90	70
##	287	263	Zigzagoon	Normal		240	38	30	41
##	288	264	Linoone	Normal		420	78	70	61
##	289	265	Wurmple	Bug		195	45	45	35
##	290	266	Silcoon	Bug		205	50	35	55
##	291	267	Beautifly	Bug	Flying	395	60	70	50
##	292	268	Cascoon	Bug		205	50	35	55
##	293	269	Dustox	Bug	Poison	385	60	50	70
##	294	270	Lotad	Water	Grass	220	40	30	30
##	295	271	Lombre	Water	Grass	340	60	50	50
##	296	272	Ludicolo	Water	Grass	480	80	70	70
##	297	273	Seedot	Grass		220	40	40	50
##	298	274	Nuzleaf	Grass	Dark	340	70	70	40
##	299	275	Shiftry	Grass	Dark	480	90	100	60
##	300	276	Tailow	Normal	Flying	270	40	55	30
##	301	277	Swellow	Normal	Flying	430	60	85	60
##	302	278	Wingull	Water	Flying	270	40	30	30
##	303	279	Pelipper	Water	Flying	430	60	50	100
##	304	280	Ralts	Psychic	Fairy	198	28	25	25
##	305	281	Kirlia	Psychic	Fairy	278	38	35	35
##	306	282	Gardevoir	Psychic	Fairy	518	68	65	65
##	307	282	GardevoirMega Gardevoir	Psychic	Fairy	618	68	85	65
##	308	283	Surskit	Bug	Water	269	40	30	32
##	309	284	Masquerain	Bug	Flying	414	70	60	62
##	310	285	Shroomish	Grass		295	60	40	60
##	311	286	Breloom	Grass	Fighting	460	60	130	80
##	312	287	Slakoth	Normal		280	60	60	60
##	313	288	Vigoroth	Normal		440	80	80	80
##	314	289	Slaking	Normal		670	150	160	100
##	315	290	Nincada	Bug	Ground	266	31	45	90
##	316	291	Ninjask	Bug	Flying	456	61	90	45
##	317	292	Shedinja	Bug	Ghost	236	1	90	45
##	318	293	Whismur	Normal		240	64	51	23

##	319	294	Loudred	Normal		360	84	71	43
##	320	295	Exploud	Normal		490	104	91	63
##	321	296	Makuhita	Fighting		237	72	60	30
##	322	297	Hariyama	Fighting		474	144	120	60
##	323	298	Azurill	Normal	Fairy	190	50	20	40
##	324	299	Nosepass	Rock		375	30	45	135
##	325	300	Skitty	Normal		260	50	45	45
##	326	301	Delcatty	Normal		380	70	65	65
##	327	302	Sableye	Dark	Ghost	380	50	75	75
##	328	302	SableyeMega	Sableye	Dark	480	50	85	125
##	329	303	Mawile	Steel	Fairy	380	50	85	85
##	330	303	MawileMega	Mawile	Steel	480	50	105	125
##	331	304	Aron	Steel	Rock	330	50	70	100
##	332	305	Lairon	Steel	Rock	430	60	90	140
##	333	306	Aggron	Steel	Rock	530	70	110	180
##	334	306	AggronMega	Aggron	Steel	630	70	140	230
##	335	307	Meditite	Fighting	Psychic	280	30	40	55
##	336	308	Medicham	Fighting	Psychic	410	60	60	75
##	337	308	MedichamMega	Medicham	Fighting	510	60	100	85
##	338	309	Electrike	Electric		295	40	45	40
##	339	310	Manectric	Electric		475	70	75	60
##	340	310	ManectricMega	Manectric	Electric	575	70	75	80
##	341	311	Plusle	Electric		405	60	50	40
##	342	312	Minun	Electric		405	60	40	50
##	343	313	Volbeat	Bug		400	65	73	55
##	344	314	Illumise	Bug		400	65	47	55
##	345	315	Roselia	Grass	Poison	400	50	60	45
##	346	316	Gulpin	Poison		302	70	43	53
##	347	317	Swalot	Poison		467	100	73	83
##	348	318	Carvanha	Water	Dark	305	45	90	20
##	349	319	Sharpedo	Water	Dark	460	70	120	40
##	350	319	SharpedoMega	Sharpedo	Water	560	70	140	70
##	351	320	Wailmer	Water		400	130	70	35
##	352	321	Wailord	Water		500	170	90	45
##	353	322	Numel	Fire	Ground	305	60	60	40
##	354	323	Camerupt	Fire	Ground	460	70	100	70
##	355	323	CameruptMega	Camerupt	Fire	560	70	120	100
##	356	324	Torkoal	Fire		470	70	85	140
##	357	325	Spoink	Psychic		330	60	25	35
##	358	326	Grumpig	Psychic		470	80	45	65
##	359	327	Spinda	Normal		360	60	60	60
##	360	328	Trapinch	Ground		290	45	100	45
##	361	329	Vibrava	Ground	Dragon	340	50	70	50
##	362	330	Flygon	Ground	Dragon	520	80	100	80
##	363	331	Cacnea	Grass		335	50	85	40
##	364	332	Cacturne	Grass	Dark	475	70	115	60
##	365	333	Swablu	Normal	Flying	310	45	40	60
##	366	334	Altaria	Dragon	Flying	490	75	70	90
##	367	334	AltariaMega	Altaria	Dragon	590	75	110	110
##	368	335	Zangoose	Normal		458	73	115	60
##	369	336	Seviper	Poison		458	73	100	60
##	370	337	Lunatone	Rock	Psychic	440	70	55	65
##	371	338	Solrock	Rock	Psychic	440	70	95	85
##	372	339	Barboach	Water	Ground	288	50	48	43

##	373	340	Whiscash	Water	Ground	468	110	78	73
##	374	341	Corphish	Water		308	43	80	65
##	375	342	Crawdaunt	Water	Dark	468	63	120	85
##	376	343	Baltoy	Ground	Psychic	300	40	40	55
##	377	344	Claydol	Ground	Psychic	500	60	70	105
##	378	345	Lileep	Rock	Grass	355	66	41	77
##	379	346	Cradily	Rock	Grass	495	86	81	97
##	380	347	Anorith	Rock	Bug	355	45	95	50
##	381	348	Armaldo	Rock	Bug	495	75	125	100
##	382	349	Feebas	Water		200	20	15	20
##	383	350	Milotic	Water		540	95	60	79
##	384	351	Castform	Normal		420	70	70	70
##	385	352	Kecleon	Normal		440	60	90	70
##	386	353	Shuppet	Ghost		295	44	75	35
##	387	354	Banette	Ghost		455	64	115	65
##	388	354	BanetteMega Banette	Ghost		555	64	165	75
##	389	355	Duskull	Ghost		295	20	40	90
##	390	356	Dusclops	Ghost		455	40	70	130
##	391	357	Tropius	Grass	Flying	460	99	68	83
##	392	358	Chimecho	Psychic		425	65	50	70
##	393	359	Absol	Dark		465	65	130	60
##	394	359	AbsolMega Absol	Dark		565	65	150	60
##	395	360	Wynaut	Psychic		260	95	23	48
##	396	361	Snorunt	Ice		300	50	50	50
##	397	362	Glalie	Ice		480	80	80	80
##	398	362	GlalieMega Glalie	Ice		580	80	120	80
##	399	363	Spheal	Ice	Water	290	70	40	50
##	400	364	Sealeo	Ice	Water	410	90	60	70
##	401	365	Walrein	Ice	Water	530	110	80	90
##	402	366	Clamperl	Water		345	35	64	85
##	403	367	Huntail	Water		485	55	104	105
##	404	368	Gorebyss	Water		485	55	84	105
##	405	369	Relicanth	Water	Rock	485	100	90	130
##	406	370	Luvdisc	Water		330	43	30	55
##	407	371	Bagon	Dragon		300	45	75	60
##	408	372	Shelgon	Dragon		420	65	95	100
##	409	373	Salamence	Dragon	Flying	600	95	135	80
##	410	373	SalamenceMega Salamence	Dragon	Flying	700	95	145	130
##	411	374	Beldum	Steel	Psychic	300	40	55	80
##	412	375	Metang	Steel	Psychic	420	60	75	100
##	413	376	Metagross	Steel	Psychic	600	80	135	130
##	414	376	MetagrossMega Metagross	Steel	Psychic	700	80	145	150
##	415	377	Regirock	Rock		580	80	100	200
##	416	378	Regice	Ice		580	80	50	100
##	417	379	Registeel	Steel		580	80	75	150
##	418	380	Latias	Dragon	Psychic	600	80	80	90
##	419	380	LatiasMega Latias	Dragon	Psychic	700	80	100	120
##	420	381	Latios	Dragon	Psychic	600	80	90	80
##	421	381	LatiosMega Latios	Dragon	Psychic	700	80	130	100
##	422	382	Kyogre	Water		670	100	100	90
##	423	382	KyogrePrimal Kyogre	Water		770	100	150	90
##	424	383	Groudon	Ground		670	100	150	140
##	425	383	GroudonPrimal Groudon	Ground	Fire	770	100	180	160
##	426	384	Rayquaza	Dragon	Flying	680	105	150	90

##	427	384	RayquazaMega Rayquaza	Dragon	Flying	780	105	180	100
##	428	385	Jirachi	Steel	Psychic	600	100	100	100
##	429	386	DeoxysNormal Forme	Psychic		600	50	150	50
##	430	386	DeoxysAttack Forme	Psychic		600	50	180	20
##	431	386	DeoxysDefense Forme	Psychic		600	50	70	160
##	432	386	DeoxysSpeed Forme	Psychic		600	50	95	90
##	433	387	Turtwig	Grass		318	55	68	64
##	434	388	Grotle	Grass		405	75	89	85
##	435	389	Torterra	Grass	Ground	525	95	109	105
##	436	390	Chimchar	Fire		309	44	58	44
##	437	391	Monferno	Fire	Fighting	405	64	78	52
##	438	392	Infernape	Fire	Fighting	534	76	104	71
##	439	393	Piplup	Water		314	53	51	53
##	440	394	Prinplup	Water		405	64	66	68
##	441	395	Empoleon	Water	Steel	530	84	86	88
##	442	396	Starly	Normal	Flying	245	40	55	30
##	443	397	Staravia	Normal	Flying	340	55	75	50
##	444	398	Staraptor	Normal	Flying	485	85	120	70
##	445	399	Bidoof	Normal		250	59	45	40
##	446	400	Bibarel	Normal	Water	410	79	85	60
##	447	401	Kricketot	Bug		194	37	25	41
##	448	402	Kricketune	Bug		384	77	85	51
##	449	403	Shinx	Electric		263	45	65	34
##	450	404	Luxio	Electric		363	60	85	49
##	451	405	Luxray	Electric		523	80	120	79
##	452	406	Budew	Grass	Poison	280	40	30	35
##	453	407	Roserade	Grass	Poison	515	60	70	65
##	454	408	Cranidos	Rock		350	67	125	40
##	455	409	Rampardos	Rock		495	97	165	60
##	456	410	Shieldon	Rock	Steel	350	30	42	118
##	457	411	Bastiodon	Rock	Steel	495	60	52	168
##	458	412	Burmy	Bug		224	40	29	45
##	459	413	WormadamPlant Cloak	Bug	Grass	424	60	59	85
##	460	413	WormadamSandy Cloak	Bug	Ground	424	60	79	105
##	461	413	WormadamTrash Cloak	Bug	Steel	424	60	69	95
##	462	414	Mothim	Bug	Flying	424	70	94	50
##	463	415	Combee	Bug	Flying	244	30	30	42
##	464	416	Vespiqueen	Bug	Flying	474	70	80	102
##	465	417	Pachirisu	Electric		405	60	45	70
##	466	418	Buizel	Water		330	55	65	35
##	467	419	Floatzel	Water		495	85	105	55
##	468	420	Cherubi	Grass		275	45	35	45
##	469	421	Cherrim	Grass		450	70	60	70
##	470	422	Shellos	Water		325	76	48	48
##	471	423	Gastrodon	Water	Ground	475	111	83	68
##	472	424	Ambipom	Normal		482	75	100	66
##	473	425	Drifloon	Ghost	Flying	348	90	50	34
##	474	426	Drifblim	Ghost	Flying	498	150	80	44
##	475	427	Buneary	Normal		350	55	66	44
##	476	428	Lopunny	Normal		480	65	76	84
##	477	428	LopunnyMega Lopunny	Normal	Fighting	580	65	136	94
##	478	429	Mismagius	Ghost		495	60	60	60
##	479	430	Honchkrow	Dark	Flying	505	100	125	52
##	480	431	Glameow	Normal		310	49	55	42

##	481	432	Purugly	Normal		452	71	82	64
##	482	433	Chingling	Psychic		285	45	30	50
##	483	434	Stunky	Poison	Dark	329	63	63	47
##	484	435	Skuntank	Poison	Dark	479	103	93	67
##	485	436	Bronzor	Steel	Psychic	300	57	24	86
##	486	437	Bronzong	Steel	Psychic	500	67	89	116
##	487	438	Bonsly	Rock		290	50	80	95
##	488	439	Mime Jr.	Psychic	Fairy	310	20	25	45
##	489	440	Happiny	Normal		220	100	5	5
##	490	441	Chatot	Normal	Flying	411	76	65	45
##	491	442	Spiritomb	Ghost	Dark	485	50	92	108
##	492	443	Gible	Dragon	Ground	300	58	70	45
##	493	444	Gabite	Dragon	Ground	410	68	90	65
##	494	445	Garchomp	Dragon	Ground	600	108	130	95
##	495	445	GarchompMega Garchomp	Dragon	Ground	700	108	170	115
##	496	446	Munchlax	Normal		390	135	85	40
##	497	447	Riolu	Fighting		285	40	70	40
##	498	448	Lucario	Fighting	Steel	525	70	110	70
##	499	448	LucarioMega Lucario	Fighting	Steel	625	70	145	88
##	500	449	Hippopotas	Ground		330	68	72	78
##	501	450	Hippowdon	Ground		525	108	112	118
##	502	451	Skorupi	Poison	Bug	330	40	50	90
##	503	452	Drapion	Poison	Dark	500	70	90	110
##	504	453	Croagunk	Poison	Fighting	300	48	61	40
##	505	454	Toxicroak	Poison	Fighting	490	83	106	65
##	506	455	Carnivine	Grass		454	74	100	72
##	507	456	Finneon	Water		330	49	49	56
##	508	457	Lumineon	Water		460	69	69	76
##	509	458	Mantyke	Water	Flying	345	45	20	50
##	510	459	Snover	Grass	Ice	334	60	62	50
##	511	460	Abomasnow	Grass	Ice	494	90	92	75
##	512	460	AbomasnowMega Abomasnow	Grass	Ice	594	90	132	105
##	513	461	Weavile	Dark	Ice	510	70	120	65
##	514	462	Magnezone	Electric	Steel	535	70	70	115
##	515	463	Lickilicky	Normal		515	110	85	95
##	516	464	Rhyperior	Ground	Rock	535	115	140	130
##	517	465	Tangrowth	Grass		535	100	100	125
##	518	466	Electivire	Electric		540	75	123	67
##	519	467	Magmortar	Fire		540	75	95	67
##	520	468	Togekiss	Fairy	Flying	545	85	50	95
##	521	469	Yanmega	Bug	Flying	515	86	76	86
##	522	470	Leafeon	Grass		525	65	110	130
##	523	471	Glaceon	Ice		525	65	60	110
##	524	472	Gliscor	Ground	Flying	510	75	95	125
##	525	473	Mamoswine	Ice	Ground	530	110	130	80
##	526	474	Porygon-Z	Normal		535	85	80	70
##	527	475	Gallade	Psychic	Fighting	518	68	125	65
##	528	475	GalladeMega Gallade	Psychic	Fighting	618	68	165	95
##	529	476	Probopass	Rock	Steel	525	60	55	145
##	530	477	Dusknoir	Ghost		525	45	100	135
##	531	478	Froslax	Ice	Ghost	480	70	80	70
##	532	479	Rotom	Electric	Ghost	440	50	50	77
##	533	479	RotomHeat Rotom	Electric	Fire	520	50	65	107
##	534	479	RotomWash Rotom	Electric	Water	520	50	65	107

## 535 479	RotomFrost	Rotom	Electric	Ice	520	50	65	107
## 536 479	RotomFan	Rotom	Electric	Flying	520	50	65	107
## 537 479	RotomMow	Rotom	Electric	Grass	520	50	65	107
## 538 480		Uxie	Psychic		580	75	75	130
## 539 481		Mesprit	Psychic		580	80	105	105
## 540 482		Azelf	Psychic		580	75	125	70
## 541 483		Dialga	Steel	Dragon	680	100	120	120
## 542 484		Palkia	Water	Dragon	680	90	120	100
## 543 485		Heatran	Fire	Steel	600	91	90	106
## 544 486		Regigigas	Normal		670	110	160	110
## 545 487	GiratinaAltered	Forme	Ghost	Dragon	680	150	100	120
## 546 487	GiratinaOrigin	Forme	Ghost	Dragon	680	150	120	100
## 547 488		Cresselia	Psychic		600	120	70	120
## 548 489		Phione	Water		480	80	80	80
## 549 490		Manaphy	Water		600	100	100	100
## 550 491		Darkrai	Dark		600	70	90	90
## 551 492	ShayminLand	Forme	Grass		600	100	100	100
## 552 492	ShayminSky	Forme	Grass	Flying	600	100	103	75
## 553 493		Arceus	Normal		720	120	120	120
## 554 494		Victini	Psychic	Fire	600	100	100	100
## 555 495		Snivy	Grass		308	45	45	55
## 556 496		Servine	Grass		413	60	60	75
## 557 497		Serperior	Grass		528	75	75	95
## 558 498		Tepig	Fire		308	65	63	45
## 559 499		Pignite	Fire	Fighting	418	90	93	55
## 560 500		Emboar	Fire	Fighting	528	110	123	65
## 561 501		Oshawott	Water		308	55	55	45
## 562 502		Dewott	Water		413	75	75	60
## 563 503		Samurott	Water		528	95	100	85
## 564 504		Patrat	Normal		255	45	55	39
## 565 505		Watchog	Normal		420	60	85	69
## 566 506		Lillipup	Normal		275	45	60	45
## 567 507		Herdier	Normal		370	65	80	65
## 568 508		Stoutland	Normal		500	85	110	90
## 569 509		Purrloin	Dark		281	41	50	37
## 570 510		Liepard	Dark		446	64	88	50
## 571 511		Pansage	Grass		316	50	53	48
## 572 512		Simisage	Grass		498	75	98	63
## 573 513		Pansear	Fire		316	50	53	48
## 574 514		Simisear	Fire		498	75	98	63
## 575 515		Panpour	Water		316	50	53	48
## 576 516		Simipour	Water		498	75	98	63
## 577 517		Munna	Psychic		292	76	25	45
## 578 518		Musharna	Psychic		487	116	55	85
## 579 519		Pidove	Normal	Flying	264	50	55	50
## 580 520		Tranquill	Normal	Flying	358	62	77	62
## 581 521		Unfezant	Normal	Flying	488	80	115	80
## 582 522		Blitzle	Electric		295	45	60	32
## 583 523		Zebstrika	Electric		497	75	100	63
## 584 524		Roggenrola	Rock		280	55	75	85
## 585 525		Boldore	Rock		390	70	105	105
## 586 526		Gigalith	Rock		515	85	135	130
## 587 527		Woobat	Psychic	Flying	313	55	45	43
## 588 528		Swoobat	Psychic	Flying	425	67	57	55

##	589	529	Drilbur	Ground		328	60	85	40
##	590	530	Excadrill	Ground	Steel	508	110	135	60
##	591	531	Audino	Normal		445	103	60	86
##	592	531	AudinoMega Audino	Normal	Fairy	545	103	60	126
##	593	532	Timburr	Fighting		305	75	80	55
##	594	533	Gurdurr	Fighting		405	85	105	85
##	595	534	Conkeldurr	Fighting		505	105	140	95
##	596	535	Tympole	Water		294	50	50	40
##	597	536	Palpitoad	Water	Ground	384	75	65	55
##	598	537	Seismitoad	Water	Ground	509	105	95	75
##	599	538	Throh	Fighting		465	120	100	85
##	600	539	Sawk	Fighting		465	75	125	75
##	601	540	Sewaddle	Bug	Grass	310	45	53	70
##	602	541	Swadloon	Bug	Grass	380	55	63	90
##	603	542	Leavanny	Bug	Grass	500	75	103	80
##	604	543	Venipede	Bug	Poison	260	30	45	59
##	605	544	Whirlipede	Bug	Poison	360	40	55	99
##	606	545	Scolipede	Bug	Poison	485	60	100	89
##	607	546	Cottonee	Grass	Fairy	280	40	27	60
##	608	547	Whimsicott	Grass	Fairy	480	60	67	85
##	609	548	Petilil	Grass		280	45	35	50
##	610	549	Lilligant	Grass		480	70	60	75
##	611	550	Basculin	Water		460	70	92	65
##	612	551	Sandile	Ground	Dark	292	50	72	35
##	613	552	Krokorok	Ground	Dark	351	60	82	45
##	614	553	Krookodile	Ground	Dark	519	95	117	80
##	615	554	Darumaka	Fire		315	70	90	45
##	616	555	DarmanitanStandard Mode	Fire		480	105	140	55
##	617	555	DarmanitanZen Mode	Fire	Psychic	540	105	30	105
##	618	556	Maractus	Grass		461	75	86	67
##	619	557	Dwebble	Bug	Rock	325	50	65	85
##	620	558	Crustle	Bug	Rock	475	70	95	125
##	621	559	Scraggy	Dark	Fighting	348	50	75	70
##	622	560	Scrafty	Dark	Fighting	488	65	90	115
##	623	561	Sigilyph	Psychic	Flying	490	72	58	80
##	624	562	Yamask	Ghost		303	38	30	85
##	625	563	Cofagrigus	Ghost		483	58	50	145
##	626	564	Tirtouga	Water	Rock	355	54	78	103
##	627	565	Carracosta	Water	Rock	495	74	108	133
##	628	566	Archen	Rock	Flying	401	55	112	45
##	629	567	Archeops	Rock	Flying	567	75	140	65
##	630	568	Trubbish	Poison		329	50	50	62
##	631	569	Garbodor	Poison		474	80	95	82
##	632	570	Zorua	Dark		330	40	65	40
##	633	571	Zoroark	Dark		510	60	105	60
##	634	572	Minccino	Normal		300	55	50	40
##	635	573	Cinccino	Normal		470	75	95	60
##	636	574	Gothita	Psychic		290	45	30	50
##	637	575	Gothorita	Psychic		390	60	45	70
##	638	576	Gothitelle	Psychic		490	70	55	95
##	639	577	Solosis	Psychic		290	45	30	40
##	640	578	Duosion	Psychic		370	65	40	50
##	641	579	Reuniclus	Psychic		490	110	65	75
##	642	580	Ducklett	Water	Flying	305	62	44	50

## 643 581	Swanna	Water	Flying	473	75	87	63
## 644 582	Vanillite	Ice		305	36	50	50
## 645 583	Vanillish	Ice		395	51	65	65
## 646 584	Vanilluxe	Ice		535	71	95	85
## 647 585	Deerling	Normal	Grass	335	60	60	50
## 648 586	Sawsbuck	Normal	Grass	475	80	100	70
## 649 587	Emolga	Electric	Flying	428	55	75	60
## 650 588	Karrablast	Bug		315	50	75	45
## 651 589	Escavalier	Bug	Steel	495	70	135	105
## 652 590	Foongus	Grass	Poison	294	69	55	45
## 653 591	Amoonguss	Grass	Poison	464	114	85	70
## 654 592	Frillish	Water	Ghost	335	55	40	50
## 655 593	Jellicent	Water	Ghost	480	100	60	70
## 656 594	Alomomola	Water		470	165	75	80
## 657 595	Joltik	Bug	Electric	319	50	47	50
## 658 596	Galvantula	Bug	Electric	472	70	77	60
## 659 597	Ferroseed	Grass	Steel	305	44	50	91
## 660 598	Ferrothorn	Grass	Steel	489	74	94	131
## 661 599	Klink	Steel		300	40	55	70
## 662 600	Klang	Steel		440	60	80	95
## 663 601	Klinklang	Steel		520	60	100	115
## 664 602	Tynamo	Electric		275	35	55	40
## 665 603	Eelektrik	Electric		405	65	85	70
## 666 604	Eelektross	Electric		515	85	115	80
## 667 605	Elgyem	Psychic		335	55	55	55
## 668 606	Beheeyem	Psychic		485	75	75	75
## 669 607	Litwick	Ghost	Fire	275	50	30	55
## 670 608	Lampent	Ghost	Fire	370	60	40	60
## 671 609	Chandelure	Ghost	Fire	520	60	55	90
## 672 610	Axew	Dragon		320	46	87	60
## 673 611	Fraxure	Dragon		410	66	117	70
## 674 612	Haxorus	Dragon		540	76	147	90
## 675 613	Cubchoo	Ice		305	55	70	40
## 676 614	Beartic	Ice		485	95	110	80
## 677 615	Cryogonal	Ice		485	70	50	30
## 678 616	Shelmet	Bug		305	50	40	85
## 679 617	Accelgor	Bug		495	80	70	40
## 680 618	Stunfisk	Ground	Electric	471	109	66	84
## 681 619	Mienfoo	Fighting		350	45	85	50
## 682 620	Mienshao	Fighting		510	65	125	60
## 683 621	Druddigon	Dragon		485	77	120	90
## 684 622	Golett	Ground	Ghost	303	59	74	50
## 685 623	Golurk	Ground	Ghost	483	89	124	80
## 686 624	Pawniard	Dark	Steel	340	45	85	70
## 687 625	Bisharp	Dark	Steel	490	65	125	100
## 688 626	Bouffalant	Normal		490	95	110	95
## 689 627	Rufflet	Normal	Flying	350	70	83	50
## 690 628	Braviary	Normal	Flying	510	100	123	75
## 691 629	Vullaby	Dark	Flying	370	70	55	75
## 692 630	Mandibuzz	Dark	Flying	510	110	65	105
## 693 631	Heatmor	Fire		484	85	97	66
## 694 632	Durant	Bug	Steel	484	58	109	112
## 695 633	Deino	Dark	Dragon	300	52	65	50
## 696 634	Zweilous	Dark	Dragon	420	72	85	70

## 697 635	Hydreigon	Dark	Dragon	600	92	105	90
## 698 636	Larvesta	Bug	Fire	360	55	85	55
## 699 637	Volcarona	Bug	Fire	550	85	60	65
## 700 638	Cobalion	Steel	Fighting	580	91	90	129
## 701 639	Terrakion	Rock	Fighting	580	91	129	90
## 702 640	Virizion	Grass	Fighting	580	91	90	72
## 703 641	TornadusIncarnate Forme	Flying		580	79	115	70
## 704 641	TornadusTherian Forme	Flying		580	79	100	80
## 705 642	ThundurusIncarnate Forme	Electric	Flying	580	79	115	70
## 706 642	ThundurusTherian Forme	Electric	Flying	580	79	105	70
## 707 643	Reshiram	Dragon	Fire	680	100	120	100
## 708 644	Zekrom	Dragon	Electric	680	100	150	120
## 709 645	LandorusIncarnate Forme	Ground	Flying	600	89	125	90
## 710 645	LandorusTherian Forme	Ground	Flying	600	89	145	90
## 711 646	Kyurem	Dragon	Ice	660	125	130	90
## 712 646	KyuremBlack Kyurem	Dragon	Ice	700	125	170	100
## 713 646	KyuremWhite Kyurem	Dragon	Ice	700	125	120	90
## 714 647	KeldeoOrdinary Forme	Water	Fighting	580	91	72	90
## 715 647	KeldeoResolute Forme	Water	Fighting	580	91	72	90
## 716 648	MeloettaAria Forme	Normal	Psychic	600	100	77	77
## 717 648	MeloettaPirouette Forme	Normal	Fighting	600	100	128	90
## 718 649	Genesect	Bug	Steel	600	71	120	95
## 719 650	Chespin	Grass		313	56	61	65
## 720 651	Quilladin	Grass		405	61	78	95
## 721 652	Chesnaught	Grass	Fighting	530	88	107	122
## 722 653	Fennekin	Fire		307	40	45	40
## 723 654	Braixen	Fire		409	59	59	58
## 724 655	Delphox	Fire	Psychic	534	75	69	72
## 725 656	Froakie	Water		314	41	56	40
## 726 657	Frogadier	Water		405	54	63	52
## 727 658	Greninja	Water	Dark	530	72	95	67
## 728 659	Bunnelby	Normal		237	38	36	38
## 729 660	Diggersby	Normal	Ground	423	85	56	77
## 730 661	Fletchling	Normal	Flying	278	45	50	43
## 731 662	Fletchinder	Fire	Flying	382	62	73	55
## 732 663	Talonflame	Fire	Flying	499	78	81	71
## 733 664	Scatterbug	Bug		200	38	35	40
## 734 665	Spewpa	Bug		213	45	22	60
## 735 666	Vivillon	Bug	Flying	411	80	52	50
## 736 667	Litleo	Fire	Normal	369	62	50	58
## 737 668	Pyroar	Fire	Normal	507	86	68	72
## 738 669	FlabÃ©bÃ©	Fairy		303	44	38	39
## 739 670	Floette	Fairy		371	54	45	47
## 740 671	Florges	Fairy		552	78	65	68
## 741 672	Skiddo	Grass		350	66	65	48
## 742 673	Gogoat	Grass		531	123	100	62
## 743 674	Pancham	Fighting		348	67	82	62
## 744 675	Pangoro	Fighting	Dark	495	95	124	78
## 745 676	Furfrou	Normal		472	75	80	60
## 746 677	Espurr	Psychic		355	62	48	54
## 747 678	MeowsticMale	Psychic		466	74	48	76
## 748 678	MeowsticFemale	Psychic		466	74	48	76
## 749 679	Honedge	Steel	Ghost	325	45	80	100
## 750 680	Doublade	Steel	Ghost	448	59	110	150

##	751	681	AegislashBlade	Forme	Steel	Ghost	520	60	150	50
##	752	681	AegislashShield	Forme	Steel	Ghost	520	60	50	150
##	753	682	Spritzee		Fairy		341	78	52	60
##	754	683	Aromatisse		Fairy		462	101	72	72
##	755	684	Swirlix		Fairy		341	62	48	66
##	756	685	Slurpuff		Fairy		480	82	80	86
##	757	686	Inkay		Dark	Psychic	288	53	54	53
##	758	687	Malamar		Dark	Psychic	482	86	92	88
##	759	688	Binacle		Rock	Water	306	42	52	67
##	760	689	Barbaracle		Rock	Water	500	72	105	115
##	761	690	Skreelp		Poison	Water	320	50	60	60
##	762	691	Dragalge		Poison	Dragon	494	65	75	90
##	763	692	Clauncher		Water		330	50	53	62
##	764	693	Clawitzer		Water		500	71	73	88
##	765	694	Helioptile		Electric	Normal	289	44	38	33
##	766	695	Heliolisk		Electric	Normal	481	62	55	52
##	767	696	Tyrunt		Rock	Dragon	362	58	89	77
##	768	697	Tyrantrum		Rock	Dragon	521	82	121	119
##	769	698	Amaura		Rock	Ice	362	77	59	50
##	770	699	Aurorus		Rock	Ice	521	123	77	72
##	771	700	Sylveon		Fairy		525	95	65	65
##	772	701	Hawlucha		Fighting	Flying	500	78	92	75
##	773	702	Dedenne		Electric	Fairy	431	67	58	57
##	774	703	Carbink		Rock	Fairy	500	50	50	150
##	775	704	Goomy		Dragon		300	45	50	35
##	776	705	Sliggoo		Dragon		452	68	75	53
##	777	706	Goodra		Dragon		600	90	100	70
##	778	707	Klefki		Steel	Fairy	470	57	80	91
##	779	708	Phantump		Ghost	Grass	309	43	70	48
##	780	709	Trevenant		Ghost	Grass	474	85	110	76
##	781	710	PumpkabooAverage	Size	Ghost	Grass	335	49	66	70
##	782	710	PumpkabooSmall	Size	Ghost	Grass	335	44	66	70
##	783	710	PumpkabooLarge	Size	Ghost	Grass	335	54	66	70
##	784	710	PumpkabooSuper	Size	Ghost	Grass	335	59	66	70
##	785	711	GourgeistAverage	Size	Ghost	Grass	494	65	90	122
##	786	711	GourgeistSmall	Size	Ghost	Grass	494	55	85	122
##	787	711	GourgeistLarge	Size	Ghost	Grass	494	75	95	122
##	788	711	GourgeistSuper	Size	Ghost	Grass	494	85	100	122
##	789	712	Bergmite		Ice		304	55	69	85
##	790	713	Avalugg		Ice		514	95	117	184
##	791	714	Noibat		Flying	Dragon	245	40	30	35
##	792	715	Noivern		Flying	Dragon	535	85	70	80
##	793	716	Xerneas		Fairy		680	126	131	95
##	794	717	Yveltal		Dark	Flying	680	126	131	95
##	795	718	Zygarde50%	Forme	Dragon	Ground	600	108	100	121
##	796	719	Diancie		Rock	Fairy	600	50	100	150
##	797	719	DiancieMega	Diancie	Rock	Fairy	700	50	160	110
##	798	720	HoopaHoopa	Confined	Psychic	Ghost	600	80	110	60
##	799	720	HoopaHoopa	Unbound	Psychic	Dark	680	80	160	60
##	800	721	Volcanion		Fire	Water	600	80	110	120
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## 490	92	42	91	4	False
## 491	92	108	35	4	False
## 492	40	45	42	4	False
## 493	50	55	82	4	False
## 494	80	85	102	4	False
## 495	120	95	92	4	False
## 496	40	85	5	4	False
## 497	35	40	60	4	False
## 498	115	70	90	4	False
## 499	140	70	112	4	False
## 500	38	42	32	4	False
## 501	68	72	47	4	False
## 502	30	55	65	4	False
## 503	60	75	95	4	False
## 504	61	40	50	4	False
## 505	86	65	85	4	False
## 506	90	72	46	4	False
## 507	49	61	66	4	False
## 508	69	86	91	4	False
## 509	60	120	50	4	False
## 510	62	60	40	4	False
## 511	92	85	60	4	False
## 512	132	105	30	4	False
## 513	45	85	125	4	False
## 514	130	90	60	4	False
## 515	80	95	50	4	False
## 516	55	55	40	4	False
## 517	110	50	50	4	False
## 518	95	85	95	4	False
## 519	125	95	83	4	False
## 520	120	115	80	4	False
## 521	116	56	95	4	False
## 522	60	65	95	4	False
## 523	130	95	65	4	False
## 524	45	75	95	4	False
## 525	70	60	80	4	False
## 526	135	75	90	4	False
## 527	65	115	80	4	False
## 528	65	115	110	4	False
## 529	75	150	40	4	False
## 530	65	135	45	4	False
## 531	80	70	110	4	False
## 532	95	77	91	4	False
## 533	105	107	86	4	False
## 534	105	107	86	4	False
## 535	105	107	86	4	False
## 536	105	107	86	4	False
## 537	105	107	86	4	False
## 538	75	130	95	4	True
## 539	105	105	80	4	True
## 540	125	70	115	4	True
## 541	150	100	90	4	True
## 542	150	120	100	4	True
## 543	130	106	77	4	True

## 544	80	110	100	4	True
## 545	100	120	90	4	True
## 546	120	100	90	4	True
## 547	75	130	85	4	False
## 548	80	80	80	4	False
## 549	100	100	100	4	False
## 550	135	90	125	4	True
## 551	100	100	100	4	True
## 552	120	75	127	4	True
## 553	120	120	120	4	True
## 554	100	100	100	5	True
## 555	45	55	63	5	False
## 556	60	75	83	5	False
## 557	75	95	113	5	False
## 558	45	45	45	5	False
## 559	70	55	55	5	False
## 560	100	65	65	5	False
## 561	63	45	45	5	False
## 562	83	60	60	5	False
## 563	108	70	70	5	False
## 564	35	39	42	5	False
## 565	60	69	77	5	False
## 566	25	45	55	5	False
## 567	35	65	60	5	False
## 568	45	90	80	5	False
## 569	50	37	66	5	False
## 570	88	50	106	5	False
## 571	53	48	64	5	False
## 572	98	63	101	5	False
## 573	53	48	64	5	False
## 574	98	63	101	5	False
## 575	53	48	64	5	False
## 576	98	63	101	5	False
## 577	67	55	24	5	False
## 578	107	95	29	5	False
## 579	36	30	43	5	False
## 580	50	42	65	5	False
## 581	65	55	93	5	False
## 582	50	32	76	5	False
## 583	80	63	116	5	False
## 584	25	25	15	5	False
## 585	50	40	20	5	False
## 586	60	80	25	5	False
## 587	55	43	72	5	False
## 588	77	55	114	5	False
## 589	30	45	68	5	False
## 590	50	65	88	5	False
## 591	60	86	50	5	False
## 592	80	126	50	5	False
## 593	25	35	35	5	False
## 594	40	50	40	5	False
## 595	55	65	45	5	False
## 596	50	40	64	5	False
## 597	65	55	69	5	False

## 598	85	75	74	5	False
## 599	30	85	45	5	False
## 600	30	75	85	5	False
## 601	40	60	42	5	False
## 602	50	80	42	5	False
## 603	70	80	92	5	False
## 604	30	39	57	5	False
## 605	40	79	47	5	False
## 606	55	69	112	5	False
## 607	37	50	66	5	False
## 608	77	75	116	5	False
## 609	70	50	30	5	False
## 610	110	75	90	5	False
## 611	80	55	98	5	False
## 612	35	35	65	5	False
## 613	45	45	74	5	False
## 614	65	70	92	5	False
## 615	15	45	50	5	False
## 616	30	55	95	5	False
## 617	140	105	55	5	False
## 618	106	67	60	5	False
## 619	35	35	55	5	False
## 620	65	75	45	5	False
## 621	35	70	48	5	False
## 622	45	115	58	5	False
## 623	103	80	97	5	False
## 624	55	65	30	5	False
## 625	95	105	30	5	False
## 626	53	45	22	5	False
## 627	83	65	32	5	False
## 628	74	45	70	5	False
## 629	112	65	110	5	False
## 630	40	62	65	5	False
## 631	60	82	75	5	False
## 632	80	40	65	5	False
## 633	120	60	105	5	False
## 634	40	40	75	5	False
## 635	65	60	115	5	False
## 636	55	65	45	5	False
## 637	75	85	55	5	False
## 638	95	110	65	5	False
## 639	105	50	20	5	False
## 640	125	60	30	5	False
## 641	125	85	30	5	False
## 642	44	50	55	5	False
## 643	87	63	98	5	False
## 644	65	60	44	5	False
## 645	80	75	59	5	False
## 646	110	95	79	5	False
## 647	40	50	75	5	False
## 648	60	70	95	5	False
## 649	75	60	103	5	False
## 650	40	45	60	5	False
## 651	60	105	20	5	False

## 652	55	55	15	5	False
## 653	85	80	30	5	False
## 654	65	85	40	5	False
## 655	85	105	60	5	False
## 656	40	45	65	5	False
## 657	57	50	65	5	False
## 658	97	60	108	5	False
## 659	24	86	10	5	False
## 660	54	116	20	5	False
## 661	45	60	30	5	False
## 662	70	85	50	5	False
## 663	70	85	90	5	False
## 664	45	40	60	5	False
## 665	75	70	40	5	False
## 666	105	80	50	5	False
## 667	85	55	30	5	False
## 668	125	95	40	5	False
## 669	65	55	20	5	False
## 670	95	60	55	5	False
## 671	145	90	80	5	False
## 672	30	40	57	5	False
## 673	40	50	67	5	False
## 674	60	70	97	5	False
## 675	60	40	40	5	False
## 676	70	80	50	5	False
## 677	95	135	105	5	False
## 678	40	65	25	5	False
## 679	100	60	145	5	False
## 680	81	99	32	5	False
## 681	55	50	65	5	False
## 682	95	60	105	5	False
## 683	60	90	48	5	False
## 684	35	50	35	5	False
## 685	55	80	55	5	False
## 686	40	40	60	5	False
## 687	60	70	70	5	False
## 688	40	95	55	5	False
## 689	37	50	60	5	False
## 690	57	75	80	5	False
## 691	45	65	60	5	False
## 692	55	95	80	5	False
## 693	105	66	65	5	False
## 694	48	48	109	5	False
## 695	45	50	38	5	False
## 696	65	70	58	5	False
## 697	125	90	98	5	False
## 698	50	55	60	5	False
## 699	135	105	100	5	False
## 700	90	72	108	5	True
## 701	72	90	108	5	True
## 702	90	129	108	5	True
## 703	125	80	111	5	True
## 704	110	90	121	5	True
## 705	125	80	111	5	True

## 706	145	80	101	5	True
## 707	150	120	90	5	True
## 708	120	100	90	5	True
## 709	115	80	101	5	True
## 710	105	80	91	5	True
## 711	130	90	95	5	True
## 712	120	90	95	5	True
## 713	170	100	95	5	True
## 714	129	90	108	5	False
## 715	129	90	108	5	False
## 716	128	128	90	5	False
## 717	77	77	128	5	False
## 718	120	95	99	5	False
## 719	48	45	38	6	False
## 720	56	58	57	6	False
## 721	74	75	64	6	False
## 722	62	60	60	6	False
## 723	90	70	73	6	False
## 724	114	100	104	6	False
## 725	62	44	71	6	False
## 726	83	56	97	6	False
## 727	103	71	122	6	False
## 728	32	36	57	6	False
## 729	50	77	78	6	False
## 730	40	38	62	6	False
## 731	56	52	84	6	False
## 732	74	69	126	6	False
## 733	27	25	35	6	False
## 734	27	30	29	6	False
## 735	90	50	89	6	False
## 736	73	54	72	6	False
## 737	109	66	106	6	False
## 738	61	79	42	6	False
## 739	75	98	52	6	False
## 740	112	154	75	6	False
## 741	62	57	52	6	False
## 742	97	81	68	6	False
## 743	46	48	43	6	False
## 744	69	71	58	6	False
## 745	65	90	102	6	False
## 746	63	60	68	6	False
## 747	83	81	104	6	False
## 748	83	81	104	6	False
## 749	35	37	28	6	False
## 750	45	49	35	6	False
## 751	150	50	60	6	False
## 752	50	150	60	6	False
## 753	63	65	23	6	False
## 754	99	89	29	6	False
## 755	59	57	49	6	False
## 756	85	75	72	6	False
## 757	37	46	45	6	False
## 758	68	75	73	6	False
## 759	39	56	50	6	False

## 760	54	86	68	6	False
## 761	60	60	30	6	False
## 762	97	123	44	6	False
## 763	58	63	44	6	False
## 764	120	89	59	6	False
## 765	61	43	70	6	False
## 766	109	94	109	6	False
## 767	45	45	48	6	False
## 768	69	59	71	6	False
## 769	67	63	46	6	False
## 770	99	92	58	6	False
## 771	110	130	60	6	False
## 772	74	63	118	6	False
## 773	81	67	101	6	False
## 774	50	150	50	6	False
## 775	55	75	40	6	False
## 776	83	113	60	6	False
## 777	110	150	80	6	False
## 778	80	87	75	6	False
## 779	50	60	38	6	False
## 780	65	82	56	6	False
## 781	44	55	51	6	False
## 782	44	55	56	6	False
## 783	44	55	46	6	False
## 784	44	55	41	6	False
## 785	58	75	84	6	False
## 786	58	75	99	6	False
## 787	58	75	69	6	False
## 788	58	75	54	6	False
## 789	32	35	28	6	False
## 790	44	46	28	6	False
## 791	45	40	55	6	False
## 792	97	80	123	6	False
## 793	131	98	99	6	True
## 794	131	98	99	6	True
## 795	81	95	95	6	True
## 796	100	150	50	6	True
## 797	160	110	110	6	True
## 798	150	130	70	6	True
## 799	170	130	80	6	True
## 800	130	90	70	6	True

The `clean_names()` function just renamed or “cleaned” the predictor’s names so it will be easier to code with.

Exercise 2

Using the entire data set, create a bar chart of the outcome variable, `type_1`.

How many classes of the outcome are there? Are there any Pokémon types with very few Pokémon? If so, which ones?

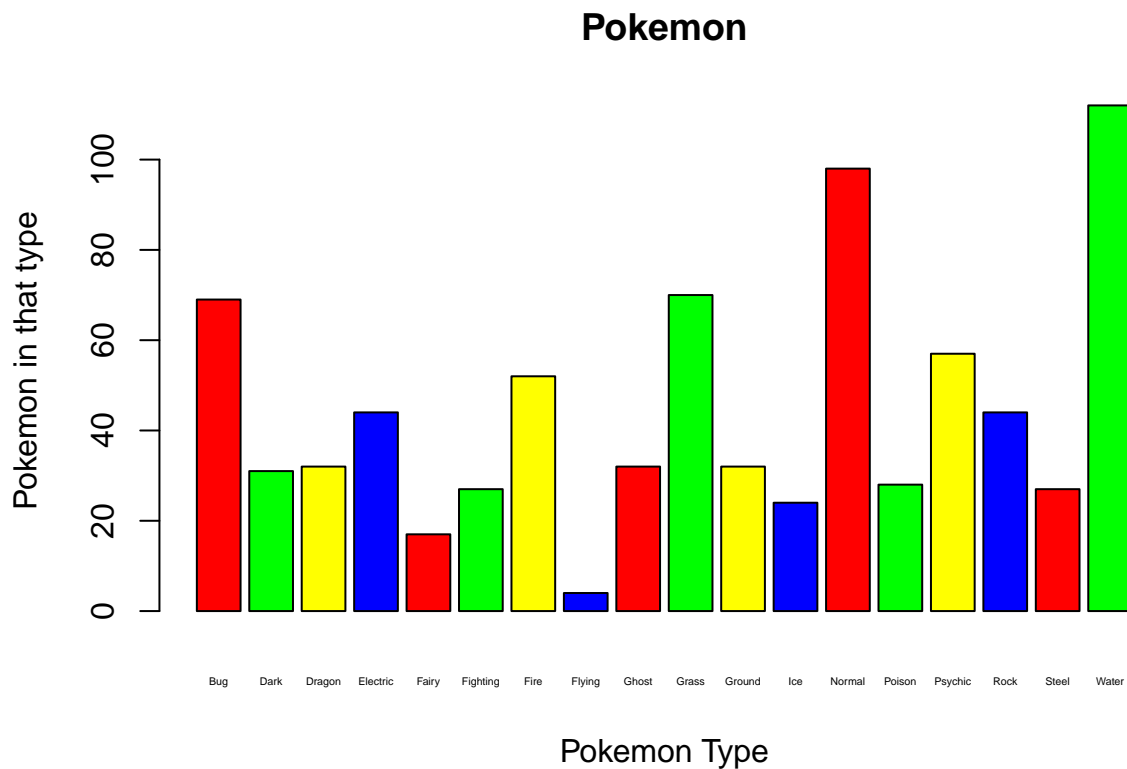
For this assignment, we’ll handle the rarer classes by simply filtering them out. Filter the entire data set to contain only Pokémon whose `type_1` is Bug, Fire, Grass, Normal, Water, or Psychic.

After filtering, convert `type_1` and `legendary` to factors.

```
type1 <- table(Pokemon$type_1)
type1
```

```
##
##      Bug      Dark  Dragon Electric      Fairy Fighting      Fire      Flying
##      69      31      32      44      17      27      52      4
##      Ghost  Grass   Ground      Ice   Normal   Poison   Psychic   Rock
##      32      70      32      24      98      28      57      44
##      Steel   Water
##      27      112
```

```
barplot(type1, xlab = "Pokemon Type", ylab = "Pokemon in that type", main = "Pokemon", width = 0.1, cex.l
```



```
Pokemon %>%
  group_by(type_1) %>%
  summarise(count = n()) %>%
  arrange(desc(count)) # 18 types of Pokemon. Flying has the least types in this dataset (4). Fairy (17)
```

```
## # A tibble: 18 x 2
##   type_1   count
##   <chr>   <int>
## 1 Water     112
```

```
## 2 Normal      98
## 3 Grass       70
## 4 Bug         69
## 5 Psychic     57
## 6 Fire        52
## 7 Electric    44
## 8 Rock        44
## 9 Dragon      32
## 10 Ghost      32
## 11 Ground     32
## 12 Dark       31
## 13 Poison     28
## 14 Fighting   27
## 15 Steel      27
## 16 Ice        24
## 17 Fairy      17
## 18 Flying      4
```

```
Common_pokemon_types <- Pokemon %>%
  filter(type_1 == "Bug" | type_1 == "Fire" | type_1 == "Grass" | type_1 == "Normal" | type_1 == "Water")
Common_pokemon_types %>%
  group_by(type_1) %>%
  summarise(count = n()) %>%
  arrange(desc(count)) #Now there are only 6 types
```

```
## # A tibble: 6 x 2
##   type_1 count
##   <chr>   <int>
## 1 Water    112
## 2 Normal    98
## 3 Grass     70
## 4 Bug       69
## 5 Psychic   57
## 6 Fire      52
```

```
Pokemon_factored <- Common_pokemon_types %>%
  mutate(type_1 = factor(type_1)) %>%
  mutate(legendary = factor(legendary)) %>%
  mutate(generation = factor(generation))
```

Exercise 3

Perform an initial split of the data. Stratify by the outcome variable. You can choose a proportion to use. Verify that your training and test sets have the desired number of observations.

Next, use v -fold cross-validation on the training set. Use 5 folds. Stratify the folds by `type_1` as well. *Hint: Look for a `strata` argument.* Why might stratifying the folds be useful?

```
set.seed(3515)
Pokemon_split <- initial_split(Pokemon_factored, strata = type_1, prop = 0.7)
Pokemon_training <- training(Pokemon_split)
Pokemon_testing <- testing(Pokemon_split)
dim(Pokemon_training) #318 observations
```

```
## [1] 318 13
```

```
dim(Pokemon_testing) #140 observations
```

```
## [1] 140 13
```

```
Pokemon_fold <- vfold_cv(Pokemon_training, strata = type_1, v = 5)
```

```
Pokemon_fold #Stratifying the folds will be useful because it will make sure there is a balance distrib
```

```
## # 5-fold cross-validation using stratification
```

```
## # A tibble: 5 x 2
```

```
## splits id
```

```
## <list> <chr>
```

```
## 1 <split [252/66]> Fold1
```

```
## 2 <split [253/65]> Fold2
```

```
## 3 <split [253/65]> Fold3
```

```
## 4 <split [256/62]> Fold4
```

```
## 5 <split [258/60]> Fold5
```

Exercise 4

Set up a recipe to predict `type_1` with `legendary`, `generation`, `sp_atk`, `attack`, `speed`, `defense`, `hp`, and `sp_def`.

- Dummy-code `legendary` and `generation`;
- Center and scale all predictors.

```
Pokemon_recipe <- recipe(type_1 ~ legendary + generation + sp_atk + attack + speed + defense + hp + sp_def) %>%  
  step_dummy(legendary) %>%  
  step_dummy(generation) %>%  
  step_center(all_predictors()) %>%  
  step_scale(all_predictors())
```

Exercise 5

We'll be fitting and tuning an elastic net, tuning `penalty` and `mixture` (use `multinom_reg` with the `glmnet` engine).

Set up this model and workflow. Create a regular grid for `penalty` and `mixture` with 10 levels each; `mixture` should range from 0 to 1. For this assignment, we'll let `penalty` range from -5 to 5 (it's log-scaled).

How many total models will you be fitting when you fit these models to your folded data?

```
Pokemon_net <- multinom_reg(penalty = tune(), mixture = tune()) %>%  
  set_engine("glmnet")  
Pokemon_workflow <- workflow() %>%  
  add_recipe(Pokemon_recipe) %>%  
  add_model(Pokemon_net)  
Pokemon_grid <- grid_regular(penalty(range = c(-5,5)), mixture(range = c(0,1)), levels = 10)  
Pokemon_grid #We have 100 rows and we will be doing it 5 times so we will have a total of 500 models.
```



```
## # A tibble: 100 x 2
##       penalty mixture
##       <dbl>   <dbl>
## 1      0.00001      0
## 2      0.000129     0
## 3      0.00167      0
## 4      0.0215       0
## 5      0.278        0
## 6      3.59         0
## 7     46.4          0
## 8     599.          0
## 9    7743.          0
## 10 100000           0
## # ... with 90 more rows
```

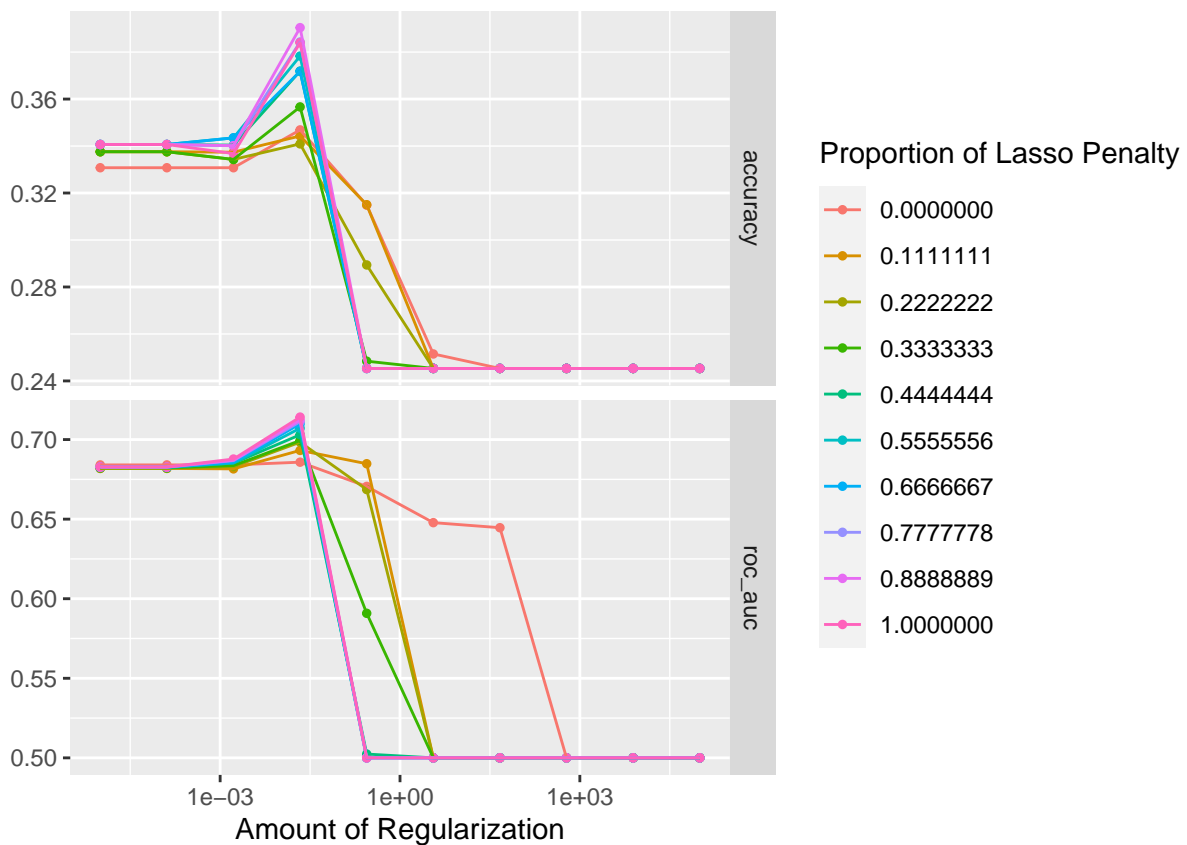
Exercise 6

Fit the models to your folded data using `tune_grid()`.

Use `autoplot()` on the results. What do you notice? Do larger or smaller values of `penalty` and `mixture` produce better accuracy and ROC AUC?

```
Pokemon_tune_grid <- tune_grid(object = Pokemon_workflow,
                              resamples = Pokemon_fold,
                              grid = Pokemon_grid)
```

```
autoplot(Pokemon_tune_grid) #The smaller values of penalty and mixture have a better accuracy and ROC AUC.
```



Exercise 7

Use `select_best()` to choose the model that has the optimal `roc_auc`. Then use `finalize_workflow()`, `fit()`, and `augment()` to fit the model to the training set and evaluate its performance on the testing set.

```
best_fit <- select_best(Pokemon_tune_grid, metric = "roc_auc")
Pokemon_finalized <- finalize_workflow(Pokemon_workflow, best_fit)
Pokemon_final_fit <- fit(Pokemon_finalized, data = Pokemon_training)

Prediction <- augment(Pokemon_final_fit, new_data = Pokemon_testing) %>%
  select(type_1, .pred_class, .pred_Bug, .pred_Fire, .pred_Grass, .pred_Normal, .pred_Psychic, .pred_Water)
accuracy(Prediction, type_1, .pred_class)
```

```
## # A tibble: 1 x 3
##   .metric .estimator .estimate
##   <chr>   <chr>      <dbl>
## 1 accuracy multiclass    0.35
```

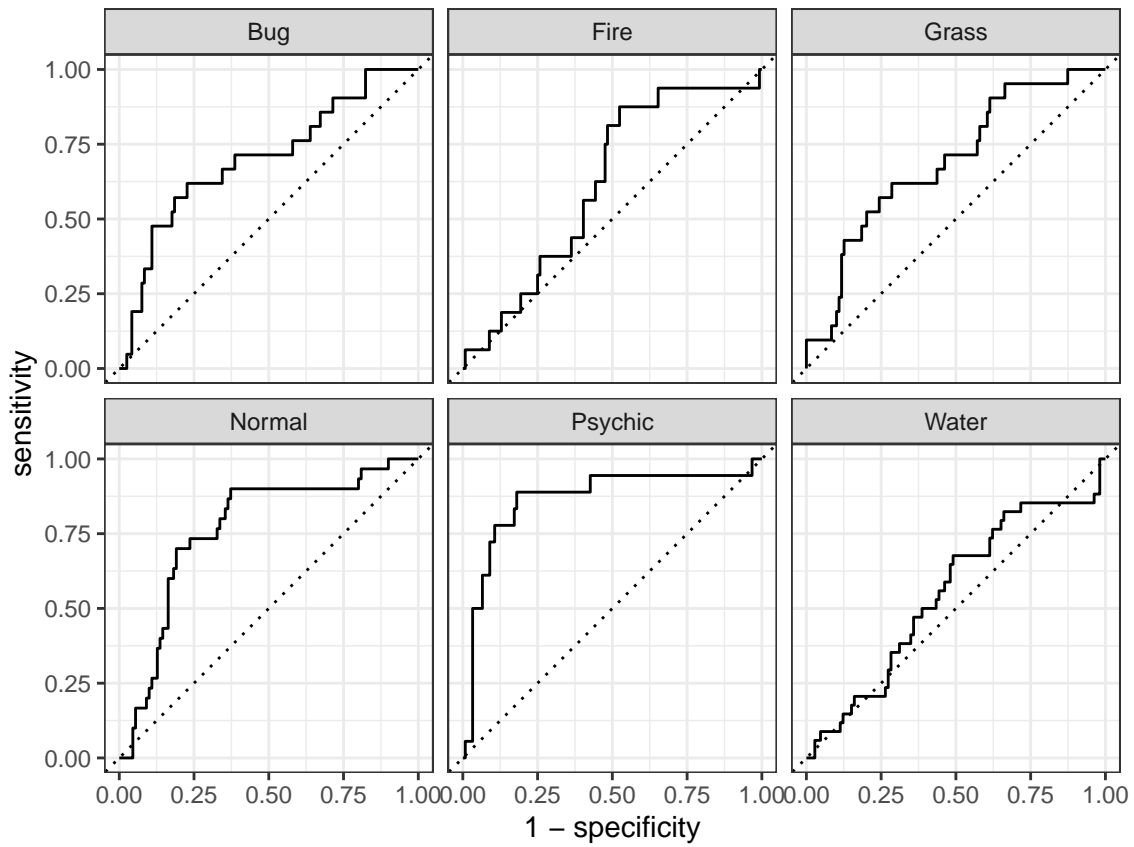
Exercise 8

Calculate the overall ROC AUC on the testing set.

Then create plots of the different ROC curves, one per level of the outcome. Also make a heat map of the confusion matrix.

What do you notice? How did your model do? Which Pokemon types is the model best at predicting, and which is it worst at? Do you have any ideas why this might be?

```
Prediction %>%
  roc_curve(type_1, .pred_Bug, .pred_Fire, .pred_Grass, .pred_Normal, .pred_Psychic, .pred_Water) %>%
  autoplot()
```



```
Prediction %>%
  conf_mat(type_1, .pred_class) %>%
  autoplot(type = "heatmap")
```

Prediction	Bug -	4	0	2	0	0	2
	Fire -	0	1	0	0	1	0
	Grass -	0	0	0	0	0	0
	Normal -	11	3	2	22	1	13
	Psychic -	0	1	1	1	4	1
	Water -	6	11	16	7	12	18
		Bug	Fire	Grass	Normal	Psychic	Water
		Truth					

#Normal was predicted the most accurately while Grass was predicted the least accurately. Normal had 22

Normal was predicted the most accurately while Grass was predicted the