

RWorksheet_Condag#1

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1. AGE VECTOR

```
age <- c(34, 28, 22, 36, 27, 18, 52, 39, 42, 29, 35, 31, 27, 22, 37, 34, 19, 20, 57, 49,
        50, 37, 46, 25, 17, 37, 42, 53, 41, 51, 35, 24, 33, 41)
```

a. DATA POINTS

```
length(age)
```

```
## [1] 34
```

2. RECIPROCAL

```
reciprocal <- 1 / age
library("MASS")
fractions(reciprocal)
```

```
## [1] 1/34 1/28 1/22 1/36 1/27 1/18 1/52 1/39 1/42 1/29 1/35 1/31 1/27 1/22 1/37
## [16] 1/34 1/19 1/20 1/57 1/49 1/50 1/37 1/46 1/25 1/17 1/37 1/42 1/53 1/41 1/51
## [31] 1/35 1/24 1/33 1/41
```

3. NEW AGE

```
new_age <- c(age, 0, age)
print(new_age)
```

```
## [1] 34 28 22 36 27 18 52 39 42 29 35 31 27 22 37 34 19 20 57 49 50 37 46 25 17
## [26] 37 42 53 41 51 35 24 33 41 0 34 28 22 36 27 18 52 39 42 29 35 31 27 22 37
## [51] 34 19 20 57 49 50 37 46 25 17 37 42 53 41 51 35 24 33 41
```

What happen to the new_age?

The new_age vector contains all the original values in the age vector, followed by a zero, and then the original values of age vector again.

4. SORT

```
sort(age)
```

```
## [1] 17 18 19 20 22 22 24 25 27 27 28 29 31 33 34 34 35 35 36 37 37 37 39 41 41
## [26] 42 42 46 49 50 51 52 53 57
```

5. MINIMUM AND MAXIMUM VALUE

```
min(age)
```

```
## [1] 17
```

```
max(age)
```

```
## [1] 57
```

6. DATA VECTOR

```
data <- c(2.4, 2.8, 2.1, 2.5, 2.4, 2.2, 2.5,  
2.3, 2.5, 2.3, 2.4, 2.7)
```

a. DATA POINTS

```
length(data)
```

```
## [1] 12
```

7. DOUBLE

```
double <- 2 * data  
print(double)
```

```
## [1] 4.8 5.6 4.2 5.0 4.8 4.4 5.0 4.6 5.0 4.6 4.8 5.4
```

What happen to the data?

The value of the elements in the data vector doubled or should I say multiplied by 2.

8. SEQUENCE, MEAN, SUM 8.1 Integers from 1 to 100

```
integers <- seq(1:100)  
print(integers)
```

```
## [1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18  
## [19] 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36  
## [37] 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54  
## [55] 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72  
## [73] 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90  
## [91] 91 92 93 94 95 96 97 98 99 100
```

8.2 Numbers from 20 to 60

```
numbers <- seq(20,60)  
print(numbers)
```

```
## [1] 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44  
## [26] 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60
```

8.3 Mean of numbers from 20 to 60

```
mean <- mean(20:60)  
print(mean)
```

```
## [1] 40
```

8.4 Sum of numbers from 51 to 91

```
sum <- sum(51:91)  
print(sum)
```

```
## [1] 2911
```

8.5 Integers from 1 to 1,000 Code and Output from 8.1 to 8.4

```
thousands <- seq(1:1000)  
thousands
```

```
## [1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14  
## [15] 15 16 17 18 19 20 21 22 23 24 25 26 27 28  
## [29] 29 30 31 32 33 34 35 36 37 38 39 40 41 42
```

##	[43]	43	44	45	46	47	48	49	50	51	52	53	54	55	56
##	[57]	57	58	59	60	61	62	63	64	65	66	67	68	69	70
##	[71]	71	72	73	74	75	76	77	78	79	80	81	82	83	84
##	[85]	85	86	87	88	89	90	91	92	93	94	95	96	97	98
##	[99]	99	100	101	102	103	104	105	106	107	108	109	110	111	112
##	[113]	113	114	115	116	117	118	119	120	121	122	123	124	125	126
##	[127]	127	128	129	130	131	132	133	134	135	136	137	138	139	140
##	[141]	141	142	143	144	145	146	147	148	149	150	151	152	153	154
##	[155]	155	156	157	158	159	160	161	162	163	164	165	166	167	168
##	[169]	169	170	171	172	173	174	175	176	177	178	179	180	181	182
##	[183]	183	184	185	186	187	188	189	190	191	192	193	194	195	196
##	[197]	197	198	199	200	201	202	203	204	205	206	207	208	209	210
##	[211]	211	212	213	214	215	216	217	218	219	220	221	222	223	224
##	[225]	225	226	227	228	229	230	231	232	233	234	235	236	237	238
##	[239]	239	240	241	242	243	244	245	246	247	248	249	250	251	252
##	[253]	253	254	255	256	257	258	259	260	261	262	263	264	265	266
##	[267]	267	268	269	270	271	272	273	274	275	276	277	278	279	280
##	[281]	281	282	283	284	285	286	287	288	289	290	291	292	293	294
##	[295]	295	296	297	298	299	300	301	302	303	304	305	306	307	308
##	[309]	309	310	311	312	313	314	315	316	317	318	319	320	321	322
##	[323]	323	324	325	326	327	328	329	330	331	332	333	334	335	336
##	[337]	337	338	339	340	341	342	343	344	345	346	347	348	349	350
##	[351]	351	352	353	354	355	356	357	358	359	360	361	362	363	364
##	[365]	365	366	367	368	369	370	371	372	373	374	375	376	377	378
##	[379]	379	380	381	382	383	384	385	386	387	388	389	390	391	392
##	[393]	393	394	395	396	397	398	399	400	401	402	403	404	405	406
##	[407]	407	408	409	410	411	412	413	414	415	416	417	418	419	420
##	[421]	421	422	423	424	425	426	427	428	429	430	431	432	433	434
##	[435]	435	436	437	438	439	440	441	442	443	444	445	446	447	448
##	[449]	449	450	451	452	453	454	455	456	457	458	459	460	461	462
##	[463]	463	464	465	466	467	468	469	470	471	472	473	474	475	476
##	[477]	477	478	479	480	481	482	483	484	485	486	487	488	489	490
##	[491]	491	492	493	494	495	496	497	498	499	500	501	502	503	504
##	[505]	505	506	507	508	509	510	511	512	513	514	515	516	517	518
##	[519]	519	520	521	522	523	524	525	526	527	528	529	530	531	532
##	[533]	533	534	535	536	537	538	539	540	541	542	543	544	545	546
##	[547]	547	548	549	550	551	552	553	554	555	556	557	558	559	560
##	[561]	561	562	563	564	565	566	567	568	569	570	571	572	573	574
##	[575]	575	576	577	578	579	580	581	582	583	584	585	586	587	588
##	[589]	589	590	591	592	593	594	595	596	597	598	599	600	601	602
##	[603]	603	604	605	606	607	608	609	610	611	612	613	614	615	616
##	[617]	617	618	619	620	621	622	623	624	625	626	627	628	629	630
##	[631]	631	632	633	634	635	636	637	638	639	640	641	642	643	644
##	[645]	645	646	647	648	649	650	651	652	653	654	655	656	657	658
##	[659]	659	660	661	662	663	664	665	666	667	668	669	670	671	672
##	[673]	673	674	675	676	677	678	679	680	681	682	683	684	685	686
##	[687]	687	688	689	690	691	692	693	694	695	696	697	698	699	700
##	[701]	701	702	703	704	705	706	707	708	709	710	711	712	713	714
##	[715]	715	716	717	718	719	720	721	722	723	724	725	726	727	728
##	[729]	729	730	731	732	733	734	735	736	737	738	739	740	741	742
##	[743]	743	744	745	746	747	748	749	750	751	752	753	754	755	756
##	[757]	757	758	759	760	761	762	763	764	765	766	767	768	769	770
##	[771]	771	772	773	774	775	776	777	778	779	780	781	782	783	784
##	[785]	785	786	787	788	789	790	791	792	793	794	795	796	797	798

```
## [799] 799 800 801 802 803 804 805 806 807 808 809 810 811 812
## [813] 813 814 815 816 817 818 819 820 821 822 823 824 825 826
## [827] 827 828 829 830 831 832 833 834 835 836 837 838 839 840
## [841] 841 842 843 844 845 846 847 848 849 850 851 852 853 854
## [855] 855 856 857 858 859 860 861 862 863 864 865 866 867 868
## [869] 869 870 871 872 873 874 875 876 877 878 879 880 881 882
## [883] 883 884 885 886 887 888 889 890 891 892 893 894 895 896
## [897] 897 898 899 900 901 902 903 904 905 906 907 908 909 910
## [911] 911 912 913 914 915 916 917 918 919 920 921 922 923 924
## [925] 925 926 927 928 929 930 931 932 933 934 935 936 937 938
## [939] 939 940 941 942 943 944 945 946 947 948 949 950 951 952
## [953] 953 954 955 956 957 958 959 960 961 962 963 964 965 966
## [967] 967 968 969 970 971 972 973 974 975 976 977 978 979 980
## [981] 981 982 983 984 985 986 987 988 989 990 991 992 993 994
## [995] 995 996 997 998 999 1000
```

a. Data Points from 8.1 to 8.4?

```
length(integers) + length(numbers) + length(mean) + length(sum)
```

```
## [1] 143
```

c. Maximum Data Points until 10

```
max(thousands[thousands <- 10])
```

```
## [1] 10
```

9. Filter

```
Filter(function(i) { all(i %% c(3, 5, 7) != 0)}, seq(100))
```

```
## [1] 1 2 4 8 11 13 16 17 19 22 23 26 29 31 32 34 37 38 41 43 44 46 47 52 53
## [26] 58 59 61 62 64 67 68 71 73 74 76 79 82 83 86 88 89 92 94 97
```

10. Backwards of the integers from 1 to 100.

```
backwards <- seq(100, 1)
print(backwards)
```

```
## [1] 100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83
## [19] 82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65
## [37] 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47
## [55] 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29
## [73] 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11
## [91] 10 9 8 7 6 5 4 3 2 1
```

11. Natural numbers below 25 that are multiples of 3 or 5.

```
numbers <- 1:24
multiples <- numbers[numbers %% 3 == 0 | numbers %% 5 == 0]
print(multiples)
```

```
## [1] 3 5 6 9 10 12 15 18 20 21 24
```

```
sum_multiples <- sum(multiples)
print(sum_multiples)
```

```
## [1] 143
```

a. Data Points from 10 to 11: 11

12. BLOCK

```
#x <- {0 + x + 5 +}
```

Describe the output: The r code turns out to be an error because the expression inside the curly braces is incomplete because it ends with a “+”.

13. SCORE VECTOR

```
score <- c(71, 86, 92, 63, 88, 89, 91, 92, 75, 75, 77)
score[2]
```

```
## [1] 86
```

```
score[3]
```

```
## [1] 92
```

14. A VECTOR

```
a <- c(1, 2, NA, 4, NA, 6, 7)
print(a, na.print="-999")
```

```
## [1] 1 2 -999 4 -999 6 7
```

Describe the output: Each element in the vector is printed, and the NA values appear as “-999” in the output.

15. SPECIAL FUNCTION

```
name = readline(prompt="Input your name: ")
```

```
## Input your name:
```

```
age = readline(prompt="Input your age: ")
```

```
## Input your age:
```

```
print(paste("My name is", name, "and I am", age, "years old."))
```

```
## [1] "My name is and I am years old."
```

```
print(R.version.string)
```

```
## [1] "R version 4.4.1 (2024-06-14)"
```