Farm Weights and Measures.

At the request of a correspondent, we subjoin the rules for measuring various agricultural commodities in the bulk, also for measuring land, and the standard weights of the principal grains, &c. The information thus condensed may have appeared at different times in former numbers of this journal, but, as our correspondent suggests, it will be convenient for many farmers to have it collected in a convenient form for reference. With regard to some of the matters, no infallible rule can be given, and much is necessarily left to the judgment. In such cases as estimating the weight of cattle by measurement, for instance, the results are not always correct, and it is by the practised eye and experienced judgment, rather than by any arithmetical calculation, that the most successful drovers and butchers form their opinions and regulate their operations.

TO MEASURE LAND.

To find the area of a square or oblong piece of land, measure the length and breadth in rods (16½ ft.); multiply the two together, and divide the product by 160, which will give the number of acres in the lot. If the shape of the land be triangular, with one corner square, to use a common expression, proceed as above, and take one-half the product as the area of the triangle. In measuring irregular fields, divide the space into parallelograms and triangles, ascertain the area of each, and the sum of the whole will give the total area.

The following rules also embrace a large number of the cases requiring surface or land measure.

To find the area of a triangle.—Multiply the base by half the altitude, and the product will be the area. By the altitude is meant a line from one angle drawn perpendicular to the opposite side as a base.

To find the area of a parallelogram.—(A four-sided figure with opposite sides parallel.)—Multiply the base by the altitude, and the product will be the area. By the *altitude*, in this instance, is meant the perpendicular distance between any two opposite sides.

To find the area of a trapezoid.—(A four-sided figure with only two sides parallel).—Multiply half the sum of the parallel sides by the altitude, and the product is the area.

To find the area of a Trapezium.—(A four-sided figure which has no two sides parallel.)—Divide the trapezium into two triangles by a diagonal, or line drawn between two opposite angles, then find the areas of these triangles; the sum will be the area of the trapezium.

The following table, clipped from the *New England Farmer*, will be found very convenient for ascertaining the area of small square or oblong plots of land. The larger figures on the margin and diagonal, represent the measurement in feet, as taken on the ground. The area given in smaller figures is expressed in square rods by the upper number, and in acres by the lower number.

There are two tables given below, having no connection with each other, except that the darker figures in the lower arc in continuation of those in the upper at corresponding intervals. In the first table the *width* of the piece of land, expressed in feet, must be looked for in the diagonal row of darker figures, the *length* in the horizontal row of darker figures at the top. In the second table the *width* must be looked for in the diagonal row of darker figures, and the *length* in the vertical column of darker figures at the left. The area will be found below the one and opposite the other.

To illustrate the use of the table:—Suppose we wish to know the contents in rods and in acres of a piece of land 140 feet long by eighty feet wide. We look in the upper table for 140 in the top row of dark figures, and find it at the top of the last column but one. Following that column down opposite to 80 in the upper diagonal row of dark figures, and we find it contains 41.14 square rods, or .2571 acres. Suppose we have another piece just twice as long and twice as wide; we look in the lower table for the length, 280 feet, in the vertical column of dark figures, and for the width, 160 feet, in the lower diagonal row, and find them at the head of the second column; then following that column down opposite 280, we find the area to be 164.55 rods, or 1.065 acres.

TO MEASURE HAY IN THE STACK OR MOW.

If it be a square or oblong stack, with a pitched roof, measure the height in feet from the base to the eaves, add to this half the height from the eaves to the ridge, to find the mean height; multiply the height by the breadth, and the product by the length. Divide the gross product by 27, and the quotient will be the number of cubic yards in the stack. The estimate of the total weight must depend upon the supposed weight of a cubic yard; this will necessarily vary according to the time allowed for the stack to settle. In an old stack the hay is much more compact than in one recently built. A pretty correct estimate will be gained by allowing 85lbs. to the cubic yard in the new stack, and 100lbs. in one that has stood a few months, and 112lbs. if it has stood more than a year. To ascertain the weight of hay in the stack, multiply the number of cubic yards by the number of pounds allowed, and the product will give the contents of the stack in pounds; divide by 2,000, and the quotient will give the number of tons. To ascertain the weight of hay in a round stack with a conical top, find the height to the eaves, and add one-third of the remainder to obtain the mean height of the whole. Measure the girth; square this dimension (that is, multiply it by itself), and multiply the product by the decimal ·0795. This will give the area of the base. Multiply the area by the mean height, and the product will be the contents of the stack, in cubic feet, divide by twenty-seven and we obtain the number of cubic yards. Multiply this as before, by the number of pounds allowed to the yard, and the product will give the gross weight in pounds. To estimate the contents of a mow where the top surface of the hay is level, the process is the same as with the square stack, or rick, omitting the allowance for the sloping roof.

TO MEASURE GRAIN IN THE BIN.

Multiply the length by the width, and their product by the height in inches; divide by 2,150 (the number of square inches in a bushel), and the product will give the number of bushels in the bin.

TO MEASURE CORN IN THE CRIB.

Measure the length, width, and depth of the crib in feet; multiply these three dimensions together, and the product by 4; cut off the last right hand figure: those to the left express the number of bushels of unshelled corn. If measured in inches multiply the three dimensions together, and divide the product by 4,300; the quotient will be the number of bushels.

### TO MEASURE ROOTS IN THE PIT OR ROOT-HOUSE.

To estimate the quantity of potatoes, turnips, or other roots in a pit, or bin, or root-house, ascertain the cubic dimensions, either in inches or feet, as in the case of small grain or corn, making allowance for the slope of the ridge by measuring only half the height, or so much of it as would be required to level the top and have a solid cubic heap:

Of the amount estimated as for small grain take three-quarters, which will give the quantity of roots; or if measured in feet according to the rule for corn in the crib, add one-half the amount, and the sum will be the quantity of roots. Thus a space that would hold twenty bushels of corn in the ear, would hold thirty bushels of roots, and forty of grain.
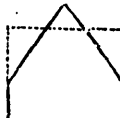
TO ESTIMATE THE WEIGHT OF CATTLE BY MEASUREMENT.

In making use of the following rules, the regularity of the shape and the condition of the animal must be taken into account. A deduction must be made if the flank is poor, and something over may be allowed in the case of very fat cattle. The mode prescribed will be more readily understood by the aid of the accompanying figure:
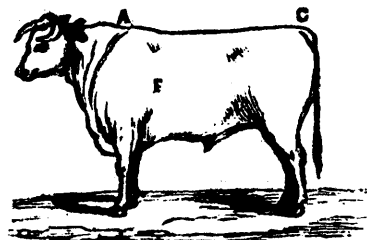
Measure, with a tape line, from the top of the shoulder *c*, to the tail head *o*, and mark this for the length; then measure round the body at *f*, immediately behind the shoulder, and mark this for the girth. Multiply the *square of the girth in inches* by the *length in inches*, and divide the product by 7,344, and the quotient is the weight in imperial stones (eight pounds). Or, square the girth in *feet*, and multiply it by the length in feet; multiply again by the decimal .238, and the sum is the weight in imperial stones.

1st.	10	16.5	20	30	33	40	50	60	70	80	90	100	110	120	130	140	150
10	.3673 .0023	.6061 .0028	.7346 .0046	1.101 .0069	1.212 .0076	1.469 .0092	1.836 .0115	2.204 .0138	2.571 .0161	2.938 .0184	3.306 .0207	3.673 .0230	4.040 .0253	4.408 .0276	4.775 .0299	5.142 .0321	5.509 .0344
16.5			1.000 .0063	1.212 .0076	1.818 .0114	2.000 .0125	2.369 .0452	3.030 .0189	3.636 .0227	4.242 .0265	4.848 .0303	5.455 .0341	6.060 .0378	6.666 .0416	7.272 .0454	7.878 .0492	8.484 .0530	9.090 .0568
20				1.469 .0092	2.203 .0138	2.424 .0152	2.938 .0184	3.673 .0230	4.407 .0275	5.142 .0321	5.879 .0367	6.611 .0413	7.346 .0459	8.080 .0505	8.815 .0551	9.550 .0597	10.28 .0643	11.02 .0689
2d. 150			**30**	3.306 .0207	3.636 .0227	4.047 .0276	5.510 .0344	6.612 .0413	7.713 .0482	8.815 .0551	9.911 .0619	11.02 .0689	12.12 .0758	13.22 .0826	14.33 .0895	15.43 .0964	16.58 .1031
150	82.62 .5165	**160**		**33**	4.000 .0250	4.848 .0303	6.061 .0379	7.273 .0455	8.485 .0530	9.697 .0606	10.91 .0682	12.12 .0758	13.33 .0833	14.55 .0909	15.76 .0985	16.97 .1061	18.18 .1136
160	88.15 .5509	94.08 .5876	**170**		**40**	5.877 .0367	7.346 .0459	8.815 .0551	10.28 .0643	11.75 .0734	13.22 .0826	14.69 .0918	16.16 .1010	17.63 .1102	19.10 .1194	20.57 .1286	22.04 .1377
170	93.66 .5854	99.91 .6244	100.15 .6634	**180**		**50**	9.182 .0574	11.02 .0689	12.85 .0803	14.69 .0918	16.53 .1033	18.37 .1148	20.20 .1263	22.04 .1377	23.88 .1492	25.77 .1606	27.55 .1722
180	99.17 .6198	105.78 .6611	112.39 .7025	119.01 .7438	**190**		**60**	13.22 .0826	15.45 .0964	17.63 .1102	19.83 .1240	22.04 .1377	24.34 .1515	26.45 .1653	28.65 .1791	30.85 .1928	33.06 .2066
190	104.68 .6542	111.00 .6979	118.64 .7415	125.61 .7851	132.59 .8287	**200**		**70**	18.00 .1125	20.57 .1286	23.14 .1446	25.71 .1607	28.28 .1768	30.93 .1928	33.49 .2089	36.00 .2250	38.57 .2410
200	110.19 .6887	117.54 .7346	124.88 .7805	132.23 .8264	139.57 .8724	146.92 .9182	**210**		**80**	23.51 .1469	26.45 .1653	29.38 .1837	32.32 .2020	35.26 .2204	38.20 .2388	41.14 .2571	44.08 .2755
210	115.70 .7231	123.41 .7713	131.12 .8195	138.84 .8678	146.55 .9159	154.26 .9641	161.98 1.012	**220**		**90**	29.75 .1860	33.06 .2066	36.36 .2273	39.67 .2479	42.98 .2685	46.28 .2893	49.59 .3099
220	121.21 .7575	129.29 .8681	137.37 .8586	145.45 .9091	153.53 .9595	161.61 1.010	169.69 1.060	177.77 1.111	**230**		**100**	36.73 .2296	40.40 .2525	44.08 .2755	47.75 .2984	51.42 .3214	55.10 .3444
230	126.72 .7920	135.17 .8448	143.61 .8976	152.06 .9503	160.51 1.003	168.96 1.055	177.41 1.109	185.85 1.162	194.30 1.214	**240**		**110**	44.44 .2777	48.93 .3058	52.53 .3283	56.57 .3535	60.61 .9785
240	132.22 .8255	141.04 .8806	149.86 .9366	158.67 .9917	167.49 1.047	176.30 1.102	185.12 1.157	193.93 1.212	202.75 1.267	211.56 1.322	**250**		**120**	52.89 .3306	57.30 .3581	61.71 .3857	66.12 .4132
250	137.64 .8609	146.92 .9182	156.10 .9756	165.29 1.033	174.47 1.090	183.65 1.148	192.83 1.205	202.01 1.263	211.20 1.320	220.38 1.377	229.56 1.434	**260**		**130**	62.08 .3880	66.85 .4178	71.63 .4476
260	143.25 .8953	152.80 .9545	162.35 1.015	171.90 1.074	182.92 1.143	190.99 1.194	200.54 1.253	210.09 1.313	219.64 1.373	229.20 1.432	238.74 1.492	248.29 1.551	**270**		**140**	71.99 .4499	77.14 .4821
270	148.76 .9297	158.68 .9917	168.59 1.054	178.51 1.116	188.42 1.178	198.34 1.240	208.26 1.302	218.17 1.364	228.09 1.426	238.01 1.488	247.93 1.549	257.84 1.611	267.76 1.673	**280**		**150**	82.64 .5165
280	154.27 .9641	164.55 1.028	174.84 1.093	185.12 1.157	195.40 1.221	205.69 1.286	215.97 1.350	226.26 1.414	236.55 1.478	246.83 1.543	257.12 1.607	267.40 1.671	277.68 1.736	287.97 1.800	**290**		
290	159.78 .9985	170.43 1.065	181.08 1.132	191.73 1.198	202.38 1.265	213.03 1.331	223.69 1.398	234.34 1.465	244.99 1.531	255.65 1.598	266.30 1.664	276.95 1.731	287.60 1.797	298.25 1.864	308.91 1.931	**300**	
300	165.29 1.033	176.81 1.102	187.32 1.171	198.34 1.240	209.36 1.308	220.39 1.377	231.40 1.446	242.42 1.515	253.44 1.584	264.46 1.653	275.48 1.722	286.50 1.791	297.52 1.859	308.54 1.928	319.56 1.997	330.58 2.066	**310**
310	170.80 1.067	182.18 1.139	193.56 1.210	204.95 1.281	216.34 1.352	227.73 1.423	239.12 1.494	250.50 1.566	261.89 1.637	273.28 1.708	284.66 1.779	296.05 1.850	307.44 1.921	318.82 1.993	330.21 2.064	341.60 2.135	352.98 2.206

TABLE OF MEASURES OF LAND.