

Formulas and Conversions

MEASUREMENT

Distance

1 foot (ft.) = 12 inches (in.)
1 yard (yd.) = 3 feet
1 mile (mi.) = 5,280 feet
1 mile \approx 1.61 kilometers (km.)
1 inch = 2.540 centimeters (cm.)
1 foot = 0.3048 meters (m.)
1 meter = 1,000 millimeters (mm.)
1 meter = 100 centimeters
1 kilometer = 1,000 meters
1 kilometer \approx 0.62 miles

Area

1 square foot (sq. ft.) = 144 square inches (sq. in.)
1 square yard (sq. yd.) = 9 square feet
1 acre = 43,560 square feet

Volume

1 cup (C.) = 8 fluid ounces
1 quart (qt.) = 2 pints (pt.) = 4 cups
1 gallon (gal.) = 4 quarts
1 gallon (gal.) = 231 cubic inches (cu. in.)
1 liter (l.) \approx 0.264 gallons = 1.056 quarts
1 cubic foot (cu. ft.) = 1,728 cubic inches
1 cubic foot = 7.48 gallons
1 cubic yard (cu. yd.) = 27 cubic feet
1 board foot = 1 inch by 12 inches by 12 inches

Weight

1 ounce (oz.) \approx 28.350 grams (g.)
1 pound (lb.) = 16 ounces
1 pound \approx 453.592 grams
1 milligram (mg.) = 0.001 grams
1 kilogram (kg.) = 1,000 grams
1 kilogram \approx 2.2 pounds
1 ton = 2,000 pounds

Temperature

$^{\circ}\text{C} = .56(^{\circ}\text{F} - 32)$ or $5/9(^{\circ}\text{F} - 32)$
 $^{\circ}\text{F} = 1.8(^{\circ}\text{C}) + 32$ or $(9/5 \times ^{\circ}\text{C}) + 32$

Electricity

1 kilowatt-hour = 1,000 watt-hours
amps = watts / volts

FORMULAS

(x is used to indicate multiply
pi is equal to 3.14)

Rectangle

perimeter = 2(length + width)
area = length x width

Rectangular Solid (Box)

volume = length x width x height

Cube

volume = (length of side)³

Triangle

sum of angles = 180^o
area = 1/2 (base x height)

Circle

number of degrees in a circle = 360^o
circumference \approx 3.14 x diameter or
pi x diameter
area \approx 3.14 x (radius)² or
pi x (radius)²

Cylinder

volume \approx 3.14 x (radius)² x height or
pi x (radius)² x height

Cone

volume \approx $\frac{3.14 \times (\text{radius})^2 \times \text{height}}{3}$

Sphere (Ball)

volume \approx $\frac{4}{3} \times 3.14 \times (\text{radius})^3$

1	10	100	1,000	10,000	100,000	1,000,000
Kilometer	Hectometer	Dekameter	meter	decimeter	centimeter	millimeter
0.001	0.01	0.1	1	10	100	1000

1	10	100	1,000	10,000	100,000	1,000,000
Kiloliter	Hectoliter	Dekaliter	liter	deciliter	centiliter	milliliter
0.001	0.01	0.1	1	10	100	1000

1	2	3	4	5	6	7	8
thousands	hundreds	tens	ones	tenths	hundredths	thousandths	ten thousandths

Story Problem "Clue" Words

Addition +

- Add
- Sum
- Total
- Plus
- In all
- Both
- Together
- Increased by
- All Together
- Combined

Subtraction -

- Subtract
- Difference
- Take Away
- Less than
- Are not
- Remain
- Decreased by
- Have left
- Are left
- Change (money problems)
- More
- Fewer

Multiplication ×

- Times
- Product of
- Multiplied by
- By (dimension)
- Factors of

Division ÷

- Quotient of
- Divided by
- Half (of fraction of)
- Split
- Separated
- Cut up
- Parts
- Shared equally

w/Prefixes

1	10	100	1,000	10,000	100,000	1,000,000
Kilometer	Hectometer	Dekameter	meter	decimeter	centimeter	millimeter
0.001	0.01	0.1	1	10	100	1000
1	10	100	1,000	10,000	100,000	1,000,000
Kiloliter	Hectoliter	Dekaliter	liter	deciliter	centiliter	milliliter
0.001	0.01	0.1	1	10	100	1000

Prefixes

Kilo = 1000

Hecto = 100

DeKa = 10

(M)

Deci = $\frac{1}{10}$

Cent = $\frac{1}{100}$

milli = $\frac{1}{1000}$

x	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
4	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80
5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160
9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180
10	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
11	11	22	33	44	55	66	77	88	99	110	121	132	143	154	165	176	187	198	209	220
12	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
13	13	26	39	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234	247	260
14	14	28	42	56	70	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280
15	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
16	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320
17	17	34	51	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323	340
18	18	36	54	72	90	108	126	144	162	180	198	216	234	252	270	288	306	324	342	360
19	19	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380
20	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400

Mathematics Test Answer Sheet

1	A	B	C	D	E
2	F	G	H	J	K
3	A	B	C	D	E
4	F	G	H	J	K
5	A	B	C	D	E
<hr/>					
6	F	G	H	J	K
7	A	B	C	D	E
8	F	G	H	J	K
9	A	B	C	D	E
10	F	G	H	J	K
<hr/>					
11	A	B	C	D	E
12	F	G	H	J	K
13	A	B	C	D	E
14	F	G	H	J	K
15	A	B	C	D	E
<hr/>					
16	F	G	H	J	K
17	A	B	C	D	E
18	F	G	H	J	K
19	A	B	C	D	E
20	F	G	H	J	K
<hr/>					
21	A	B	C	D	E
22	F	G	H	J	K
23	A	B	C	D	E
24	F	G	H	J	K
25	A	B	C	D	E
<hr/>					
26	F	G	H	J	K
27	A	B	C	D	E
28	F	G	H	J	K
29	A	B	C	D	E
30	F	G	H	J	K

31	A	B	C	D	E
32	F	G	H	J	K
33	A	B	C	D	E
34	F	G	H	J	K
35	A	B	C	D	E
<hr/>					
36	F	G	H	J	K
37	A	B	C	D	E
38	F	G	H	J	K
39	A	B	C	D	E
40	F	G	H	J	K
<hr/>					
41	A	B	C	D	E
42	F	G	H	J	K
43	A	B	C	D	E
44	F	G	H	J	K
45	A	B	C	D	E
<hr/>					
46	F	G	H	J	K
47	A	B	C	D	E
48	F	G	H	J	K
49	A	B	C	D	E
50	F	G	H	J	K
<hr/>					
51	A	B	C	D	E
52	F	G	H	J	K
53	A	B	C	D	E
54	F	G	H	J	K
55	A	B	C	D	E
<hr/>					
56	F	G	H	J	K
57	A	B	C	D	E
58	F	G	H	J	K
59	A	B	C	D	E
60	F	G	H	J	K

To experience interacting with the various item types, find the item samplers at the GED Testing Service® web site: <http://www.gedtestingservice.com/educators/itemsampler>. The item samplers are designed to show examples of each type of test item; they are not meant to illustrate the range of difficulty of GED® test items.

Table 1: Overview of Each of the Four GED® Tests

	Reasoning through Language Arts (RLA)	Mathematical Reasoning	Science	Social Studies
<i>Which item types are on the test?</i>	Multiple choice, fill-in-the-blank, drop-down, drag-and-drop, and extended response	Multiple choice, fill-in-the-blank, drop-down, drag-and-drop, and hot spot	Multiple choice, fill-in-the-blank, drop-down, drag-and-drop, hot spot, and short answer	Multiple choice, fill-in-the-blank, drop-down, drag-and-drop, hot spot and extended response
<i>Is writing required?</i>	Yes, one extended response item, about 45 minutes	No, not beyond fill-in-the-blank.	Yes, two short answer questions, about 10 minutes each.	Yes, one extended response item, about 25 minutes.
<i>Are calculations expected?</i>	No.	Yes.	Yes.	Yes.
<i>Time limit</i>	About 3 hours, including 10 minute break	1 hour 30 minutes	1 hour 15 minutes	1 hour 30 minutes

TI-30XS
ONLINE CALCULATOR