

Day of Month	Day of Week.	Remarkable Events.	ASTRONOMICAL NOTES.	Polar Distance of Pole Star.	MATHEMATICAL PROBLEMS.
1	Satur.	<i>All Saints.</i>	Moon lowest.	1 27 4	Prob. 77.—If a cy-
2	SUND.	<i>24th Sunday after Trinity.</i>	♄ Gr. Elong. West.	1 27 3	loid, whose height is 5
3	Moncl.	Sir Samuel Romilly died 1818.	Jupiter South, 9.8 Ev.	1 27 3	feet, revolve about its
4	Tuesd.	(2) St. Jean d' Acre taken, 1840.	Venus in Scorpio.	1 27 3	base, what surface and
5	Wed.	Battle of Inkermann, 1854.	Venus South, 1.39 Ev.	1 27 2	solidity will it generate?
6	Thur.	Princess Charlotte died, 1817.	Moon in Sagittarius.	1 27 2	Prob. 78.—What is
7	Friday	First Newspaper at Oxford, 1665.	Moon near Neptune.	1 27 2	the solidity and surface
8	Satur.	(7) Milton died, 1674.	Moon near Jupiter.	1 27 1	of a wedge, whose base
9	SUND.	<i>25th Sunday after Trinity.</i>	Saturn in Gemini.	1 27 1	is 5 feet long and 1 foot
10	Moncl.	Marlin Luther born, 1483.	Jupiter South, 8.39 Ev.	1 27 1	broad, the height being
11	Tuesd.	Battle of Williamsburg, 1813.	Moon perigee.	1 27 0	2 feet and length of edge
12	Wed.	Montreal taken, 1775.	Uranus near Moon.	1 27 0	3 feet?
13	Thur.	Curran died, 1817.	Venus South, 1.51 Eve.	1 27 0	Prob. 79.—If the ruler
14	Friday	Source of Nile discov. 1770.	Uranus 180° E. of Sun.	1 26 59	of Problem 85 be sawed
15	Satur.	Great Fire in New York, 1835.	Moon near Saturn.	1 26 59	in two obliquely cross-
16	SUND.	<i>26th Sunday after Trinity.</i>	15th. Moon highest.	1 26 59	wise, making the height
17	Moncl.	(16) Reubens born, 1577.	Jupiter South, 8.11 Ev.	1 26 58	of the smallest part 6
18	Tuesd.	Cardinal Woolsey died, 1530.	Venus South, 1.58 Ev.	1 26 58	inches, and nothing;
19	Wed.	Battle of Navarino, 1827.	Moon near Regulus.	1 26 58	what will be the surface
20	Thur.	Cape doubled, 1497.	Jupiter in Pisces.	1 26 57	and solidity of each part,
21	Friday	Princess Royal born, 1840.	Sun enters Scorpio.	1 26 57	and the distance around
22	Satur.	Tillotson died, 1694.	Venus farthest South.	1 26 57	the sawed part?
23	SUND.	<i>27th Sunday after Trinity.</i>	Moon in apogee.	1 26 56	Prob. 80.—If the ruler
24	Moncl.	John Knox died, 1572.	Jupiter Stationary.	1 26 56	of Problem 85 be cut by a
25	Tuesd.	British evacuated N. York, 1783.	Jupiter South, 7.39 Ev.	1 26 56	plane through its side
26	Wed.	Dr. Watts died, 1748.	Moon near Mercury.	1 26 56	and end, making the
27	Thur.	Frontenac died at Quebec, 1698.	Neptune Stationary.	1 26 55	height of the smaller
28	Friday	Goldsmith born, 1713.	Mercury in Des. node.	1 26 55	body six inches, and its
29	Satur.	(30) St. Andrew's Day.	Moon furthest South.	1 26 55	base $\frac{1}{2}$ an inch wide, what
30	SUND.	<i>Advent Sunday.</i>	Moon near Venus.	1 26 44	will be the surface and
					solidity of each part?

ANSWERS TO THE EXAMPLES FOR 1855.

Ex 34.—Let $100=a$, $65=b$, $55=c$, then one line $=\frac{2}{6}\sqrt{(2b^2+2c^2-a^2)}=22.3606797$; another $=\frac{2}{6}\sqrt{(2a^2+2b^2-c^2)}=53.15$; and the other $=\frac{2}{6}\sqrt{(2a^2+2c^2-b^2)}=49.244$. Ans.

Ex. 35.—Let $50=a$, $1560=\frac{1}{2}b$, base $=x$, then $x^2+\frac{1}{2}ax^2=b^2\div 2a$; from which $x=39$, and perp. $=80$. Ans.

Will some one give us a simpler formula?

Ex. 36.—Let $100=a$, $109=b$, $c=50$, then the base $=(ab-c^2)(a+b)\div(ab+c^2)=131$ 1-67th. Ans.

Ex. 37.—Let $100=a$, diameter $=7912=2r$, then he can see $a\div 2(r+a)=25\div 2028$ of the surface. Ans.

Ex. 38.—Let $95=a$, $98=b$, $100=c$, x =base. Then $x=2a^2b\sqrt{c}\div\sqrt{(2a^4b^2c^2+2a^2b^2c^4+2a^2b^4c^2-2a^4c^4-b^4c^4)}=115.99519$. Ans.

Ex. 39.—Let $100=a^2$, then one leg $=a\sqrt{(1/(2\sqrt{5}-2))}=12.5392$; the other $=a\sqrt{(1/(2\sqrt{5}+2))}=15.9498$. Ans.

Ex. 40.—Let $2=a$, $3=b$, $5=c$, then the perpendicular $=(a+b+c)=10$; the side $=\frac{2}{3}\sqrt{3(a+b+c)}=11.547$. Ans.

Area $=\frac{1}{3}\sqrt{3(a+b+c)^2}=\frac{1}{3}(100\sqrt{3})=57.735$. Ans.

Ex. 41.—35.80737, 47.40728, and 59.41143. Ans.

Note.—Will some one find a set of formulæ for this?

Ex. 42.—One leg $=2\sqrt{(4a^2-b^2)}\div\sqrt{15}$, the other $=2\sqrt{(4b^2-a^2)}\div\sqrt{15}$, and hypotenuse $=\frac{2}{5}\sqrt{(5a^2+5b^2)}$

Ex. 43.—Let $a=18$, $b=17$, and $6:5::m:n$; then one side $=m\sqrt{(a^2-b^2)}\div\sqrt{(m^2-n^2)}=30$; the other side $=n\sqrt{(a^2-b^2)}\div\sqrt{(m^2-n^2)}=25$. Ans.

- ☉ First Qu.
 ○ Full Mo.
 ☾ Last Qu.
 ☽ New Mo.
 ☾ Perigee
 ☽ Apogee

Day Mo. Sol. Ev.

Day of Month	Day of Week.
1 ...	1
7 ...	1
13 ...	1
19 ...	2
25 ...	2
30 ...	2

Day of Month

Day of Week.

1	Satur.
2	SUND.
3	Moncl.
4	Tuesd.
5	Wed.
6	Thur.
7	Friday
8	Satur.
9	SUND.
10	Moncl.
11	Tuesd.
12	Wed.
13	Thur.
14	Friday
15	Satur.
16	SUND.
17	Moncl.
18	Tuesd.
19	Wed.
20	Thur.
21	Friday
22	Satur.
23	SUND.
24	Moncl.
25	Tuesd.
26	Wed.
27	Thur.
28	Friday
29	Satur.
30	SUND.

Prob. 81
 $30x^4+80x^3$

Prob. 82
 88 be emp
 bottom app
 and solidity

Prob. 83