Qu. 65. A. B. & C. make a joint stock; A. put in 17 L less than B. & 31 L. less than C; & the sum of the shares of A & B is to the sum of the shares of B & C. as 6 to 7. What did each put in?

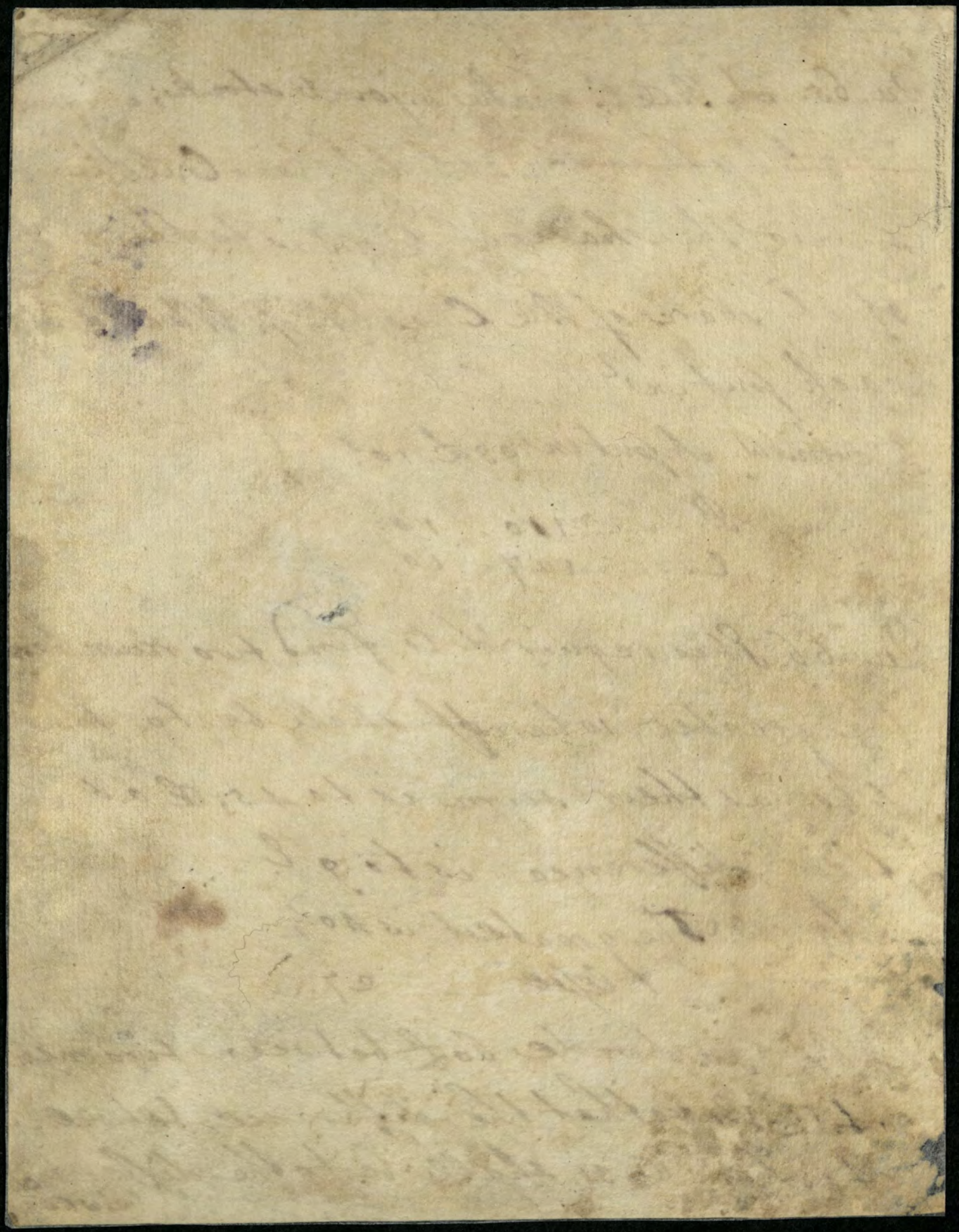
Answ. A. put in 93 L. 10 s.

B. ..... 100. 10.
C. ..... 127. 10.

Qu. 66. It is requir'd to find two numbers the greater whereof shall be to the lesser as their sum is to 45; & as their difference is to 9 L.

Answ. The greatest is 40 1/2
lesser ---- 27.

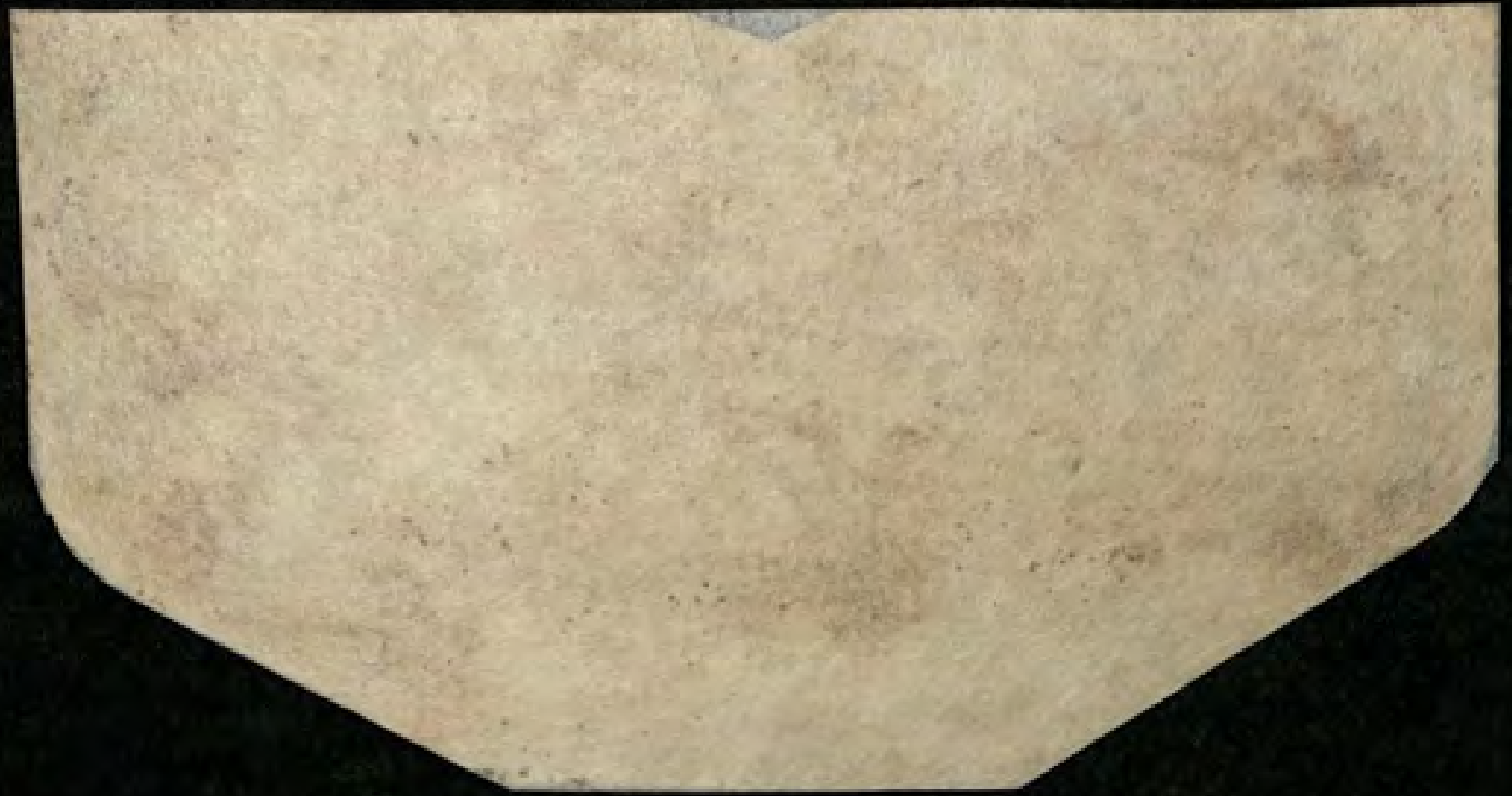
Qu. 67. To divide 60 L between two men A. & B. so that the difference between A's share & 31, shall be to the difference between



G. P
(1879)

Questions in Algebra

II



between 31 & B's Share as 6 5/7: What

Answ. A's Share 43.
B's — — 17.

Qu. 68. There are two Numbers x and y, which are to each other as 5 to 3; and the Sum of their Squares is to their Sum as 15 to 1: What are the vallues of x and y?

Answ. x is 10
& y — — 6.

Qu. 69. A Tobacconist sold a quantity of Tobacco for 19^s, part at 1^s per pound and the rest at 15^d, now the first part was to the latter as $\frac{3}{4}$ to $\frac{2}{3}$: How much was sold of each?

Answ. 9 lb at 1^s
& 8 lb at 15^d.

(1881)

Qu. 70. To find two numbers which shall be to each other as 3 to 2 & the sum of which shall be equal to the square of their difference?

Answ. 1 Number 15

2 10

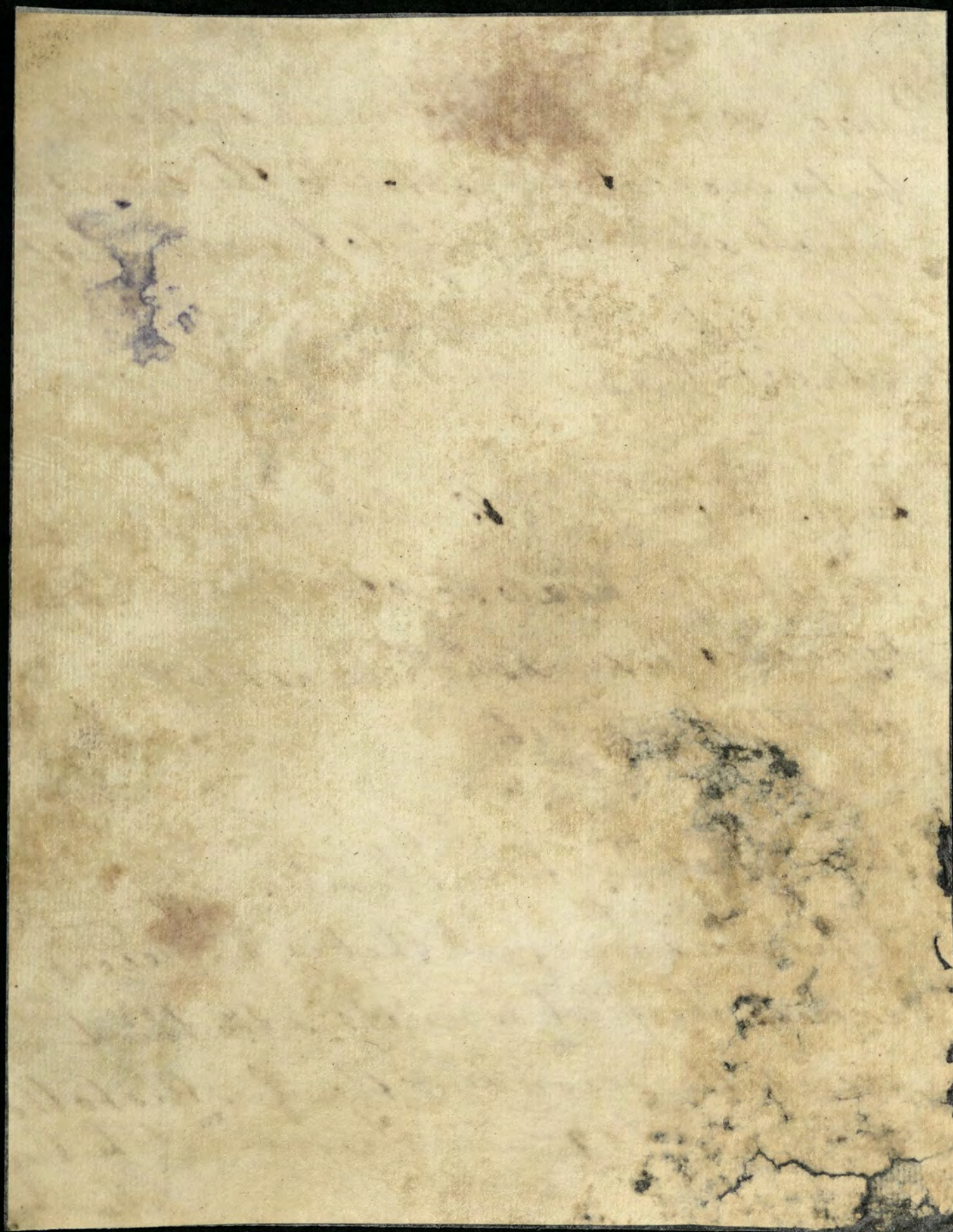
Qu. 71. To find two Numbers which shall be to each other as 2 to 3 & so that if 4 be added to each the sums shall be as 5 to 9?

Answ. 1 Number 16

..... 24

Qu. 72. There are three Numbers whose differences are equal, that is, the second exceeds the first as much as the third exceeds the second; & the first is to the third as 5 to 7; also the sum of the three

Numbers



Numbers is 224: what are the Numbers?

Answ. 90. 108. 126.

Qu. 73. What two Numbers are those whose difference, Sum, & product, are to each other as the Numbers 2, 3, and 5, respectively?

Answ. 10. 2.

Qu. 74. What two Numbers are a 7 to 5, whose product is to their Sum as 35 to 3?

Ans. [illegible]. & 2. 0.

Qu. 75 One has two sorts of Wine A and B; the wine A is worth 6d a quart, and B, 10d a quart; He would mix 100 quarts of those wines so that each quart of the mixture may be afforded for 7d. How many quarts of each may be taken?

Answ. 75 of A. & 25 of B.

Qu. 6. There are 4 numbers, the 1st. of which is to the 2d, as the 3d to the 4th.; the sum of the 1st & 2d is 20, & of the 3d & 4th. 12; but the difference of the 2d & 3d is 4. What are the numbers?

Answ. 10:10:: 6:6.

Qu. 7. If the Sum of two Numbers be 15 & their product 56: What are the Numbers?

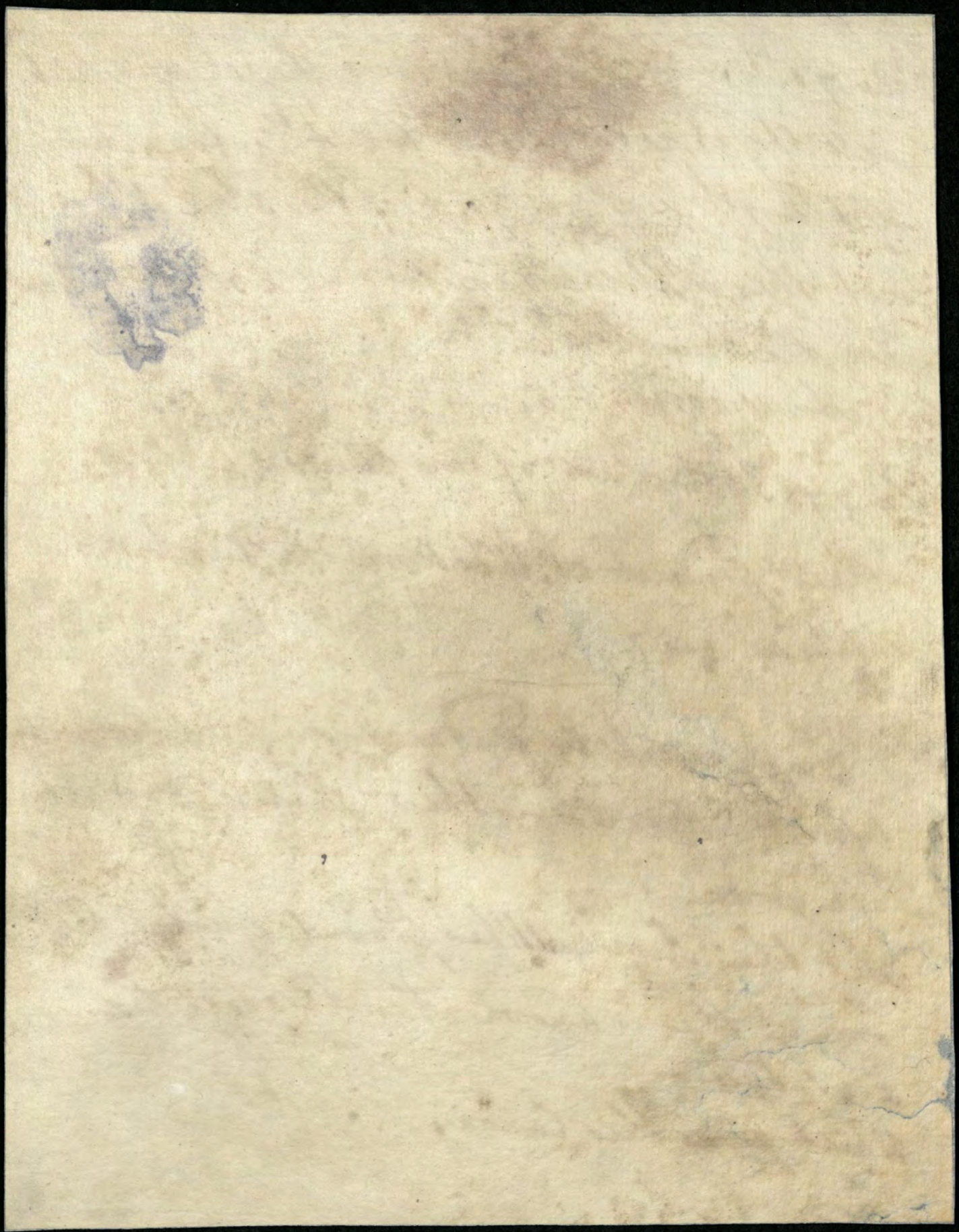
Answ. 8 & 7.

Qu. To general to find a canon for determining two Numbers when their Sum & product are given.

Let the Sum equal s the product equal p. & one of the unknown Numbers call'd x.

$x = \frac{1}{2}s \pm \sqrt{\frac{1}{4}ss - p}$.

Which gives this Canon.



1. Take half the Sum & Square it.
2. From this Square subtract the Product.
3. Extract the Square Root of the remainder.
4. Add & Subtract this Root to and from half the Sum & You will have the two Numbers requir'd.

Qu. 78. The difference & product being given to find the numbers.

Answ. $x \frac{1}{2} d + \sqrt{\frac{1}{4} d d + p}$.

Qu. 79. The Sum & quotient being given to find the Numbers.

Answ. $x = \frac{q s}{q+1}$.

Qu. 89. The difference & quotient being given to find the numbers.

Answ. $x = \frac{q d}{q-1}$.