

VARIANT 1

Full name:	Group:

Task:	1	2	3	Total
Score:				

1. (5 points)

Find the equations of dircetrices, the length of the latus rectum and coordinates of focus (or foci) of the following curves:

(a) $x^2 - 2x + y = 0$

(b) $x + y - x^2 + 2xy - y^2 = 0$

2. (5 points) Find the canonical equation of an ellipse (major axis is horizontal), if it is known that the eccentricity equals 0.5 and the distance from its focus to the nearest vertex is 2.

3. (5 points) Find the equations of the tangent and normal lines to the curve defined by the equation $x^2 - xy - y^2 + x + y = 0$ at the point with coordinates (0.6, 1.2) .

VARIANT 2

Full name:	Group:

Task:	1	2	3	Total
Score:				

1. (5 points)

Find the equations of dircetrices, the length of the latus rectum and coordinates of focus (or foci) of the following curves:

(a) $\frac{x^2}{72} - \frac{y^2}{8} = 2$

(b) $x^2 - xy - y^2 + x + y = 0$

2. (5 points) Find the canonical equation of parabola if it is known that the equation of directrix $x - y = 0$. Focus of the parabola has coordinates $(1, -1)$.

3. (5 points) Find the equations of the tangent and normal lines to the curve defined by the equation $\frac{(x-3)^2}{4} + \frac{y^2}{9} = 1$ at the point with coordinates $(1.4, 1.8)$.

VARIANT 3

Full name:	Group:

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Score:				

1. (5 points)

Find the equations of dircetrices, the length of the latus rectum and coordinates of focus (or foci) of the following curves:

(a) $x^2 + 2x^2 = 8$

(b) $x^2 - xy - y^2 + x + y = 0$

2. (5 points) Find the canonical equation of hyperbola if it is known that the angle between the asymptotes that contains a focus equals 30° and the distance from the vertex to the nearest directrix is equal to 3.

3. (5 points) Find the equations of the tangent and normal lines to the the curve defined by the equation $-x^2 + 2xy - y^2 + x + y = 0$ at the point with coordinates $(1, 0)$.