

35582

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. $M(2, 6)$ - , $O(0, 0)$, OMG

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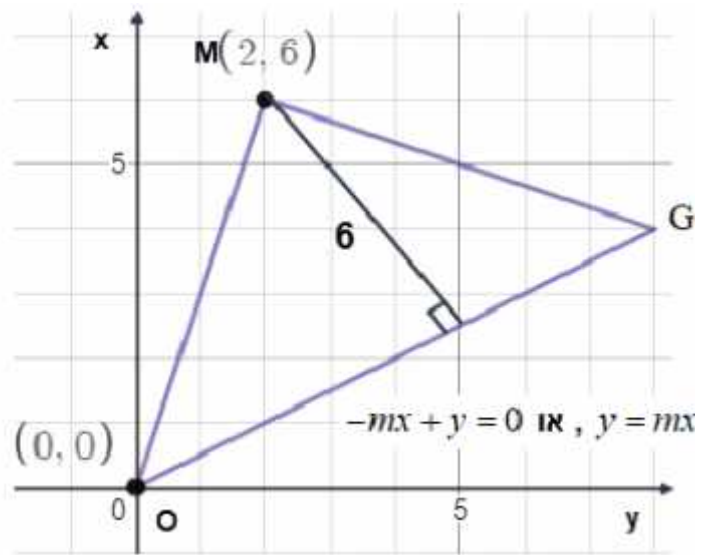
_____)

, $y_M \times 6$, 6 M -

. $y \times 0$, x - OG

. m -

, y - , $x_M \times 2 \mid 6$
 . $Zmx \Gamma y \times 0$, $y \times mx$, OG



:

$$6 \times \frac{|Z2m \Gamma 6|}{\sqrt{m^2 \Gamma 1}}$$

$$3\sqrt{m^2 \Gamma 1} \times |Zm \Gamma 3|$$

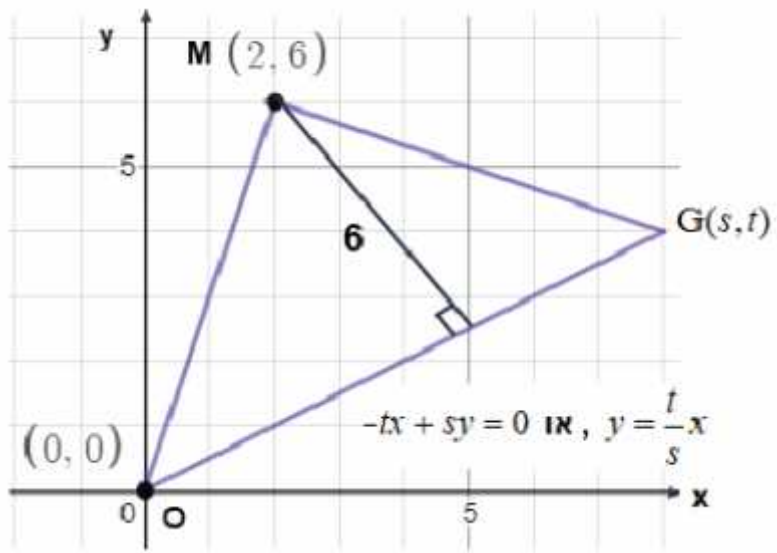
$$9(m^2 \Gamma 1) \times (3Zm)^2$$

$$8m^2 \Gamma 6m \times 0$$

$$m \times 0, m \times Z \frac{3}{4}$$

. $y \times Z \frac{3}{4} x$, $y \times 0$:

$G(s,t)$



$\cdot Ztx \Gamma sy X0 , y X \frac{t}{s}x$

OG

:

$$6 X \frac{|Z2t \Gamma 6s|}{\sqrt{s^2 \Gamma t^2}}$$

$$3\sqrt{s^2 \Gamma t^2} X |Zt \Gamma 3s|$$

$$9(s^2 \Gamma t^2) X (3s Zt)^2$$

$$9s^2 \Gamma 9t^2 X 9s^2 Z 6st \Gamma t^2$$

$$8t^2 \Gamma 6st X 0$$

$$2t(4t \Gamma 3s)$$

$$2t X 0 \mid t X 0 \mid \boxed{y X 0}$$

$$4t \Gamma 3s X 0 \mid t X Z \frac{3}{4}s \mid \boxed{y X Z \frac{3}{4}x}$$

$\cdot y X Z \frac{3}{4}x , y X 0 :$

Q - P

M(2,6)

6 (1)

$(x-2)^2 + (y-6)^2 = 36$:

(2,0) (Q) P , 6 x - (2)

Q(4q, 3q)

$y = \frac{3}{4}x$

$r = \frac{4}{3}$, MQ

$$\frac{6 \cdot \frac{4}{3}}{2 \cdot \frac{4}{3}} = \frac{4}{3}$$

$$18 \cdot \frac{4}{3} = 24$$

$$q = 0.4$$

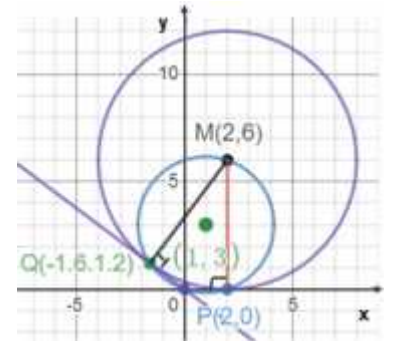
(1.6, 1.2) (P) Q

(1.6, 1.2) - (2,0)

$\angle P O Q = 90^\circ$ | 180

OM

OPMQ



$$\left(\frac{0 \cdot 2}{2}, \frac{0 \cdot 6}{2}\right) = (1, 3)$$

$$R = \frac{1}{2} \sqrt{2^2 + 6^2} = \sqrt{10}$$

$(x-1)^2 + (y-3)^2 = 10$

OPMQ :

$$\boxed{\overline{KB} X u} \quad \boxed{\overline{KC} X v} \quad \boxed{\overline{AA'} X w}$$

$$\overline{B'M} X \frac{1}{2} \overline{B'C'} X \frac{1}{2} \overline{BC} X \frac{1}{2} (\overline{BK} \Gamma \overline{KC})$$

$$\boxed{\overline{B'M} X Z \frac{1}{2} \underline{u} \Gamma \frac{1}{2} \underline{v}}$$

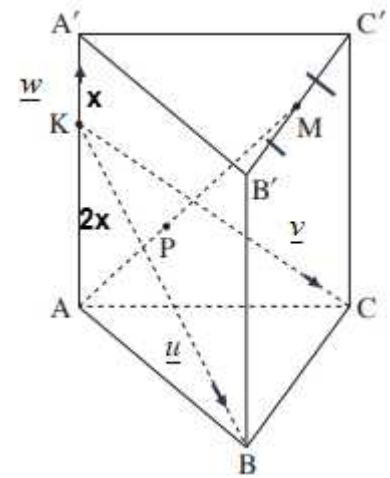
$$AK X 2KA'$$

$$\boxed{\overline{AK} X \frac{2}{3} \underline{w}}$$

$$\overline{AM} X \overline{AK} \Gamma \overline{KB} \Gamma \overline{BB'} \Gamma \overline{B'M}$$

$$\overline{AM} X \frac{2}{3} \underline{w} \Gamma \underline{u} \Gamma \underline{v} Z \frac{1}{2} \underline{u} \Gamma \frac{1}{2} \underline{v}$$

$$\boxed{\overline{AM} X \frac{1}{2} \underline{u} \Gamma \frac{1}{2} \underline{v} \Gamma \frac{5}{3} \underline{w}}$$



$$\cdot \overline{AM} X \frac{1}{2} \underline{u} \Gamma \frac{1}{2} \underline{v} \Gamma \frac{5}{3} \underline{w} :$$

$$\boxed{\overline{KP} X r \underline{u} \Gamma s \underline{v}}$$

$$\overline{KP} X \overline{KA} \Gamma x \overline{AM}$$

$$\overline{KP} X Z \frac{2}{3} \underline{w} \Gamma x (\frac{1}{2} \underline{u} \Gamma \frac{1}{2} \underline{v} \Gamma \frac{5}{3} \underline{w})$$

$$\boxed{\overline{KP} X \frac{1}{2} x \underline{u} \Gamma \frac{1}{2} x \underline{v} \Gamma (Z \frac{2}{3} \underline{w} \Gamma \frac{5}{3} x) \underline{w}}$$

$\cdot \overline{KP}$

$$(1) r X \frac{1}{2} x$$

$$(2) s X \frac{1}{2} x$$

$$(3) 0 X \frac{5}{3} x Z \frac{2}{3} \underline{w} \mid \boxed{x X \frac{2}{5}} \mid \boxed{r X \frac{1}{5}} , \boxed{s X \frac{1}{5}}$$

$$\cdot s X \frac{1}{5} , r X \frac{1}{5} :$$

"

. $\underline{v} X(10, Z5, 0)$, $\underline{u} X(5, 5, Z5)$, $P(0, 4, 6)$:

. KBC K , $\overline{KP} X \underline{u} \Gamma s \underline{v}$ (1)

, K , KBC P :

, \overline{KP} -

, KBC (2)

. $\underline{x} X(0, 4, 6) \Gamma t(1, 1, Z1) \Gamma s(2, Z1, 0)$

$(a, b, c) (1, 1, Z1) X0 \mid a \Gamma b Zc X0$

$(a, b, c) (2, Z1, 0) X0 \mid 2a Zb X0 \mid a X1, b X2$

$1 \Gamma 2 Zc X0 \mid c X3$

$f_{KBC} = x + 2y + 3z + d = 0$

$P(0, 4, 6) f_{KBC} \mid 0 \Gamma 2 4 \Gamma 3 6 \Gamma d X0 \mid d X Z 26$

$$\boxed{f_{KBC} = x + 2y + 3z Z 26 = 0}$$

. $x + 2y + 3z Z 26 = 0$ KBC :

. K (3)

$\overline{KP} X \frac{1}{5} \underline{u} \Gamma \frac{1}{5} \underline{v}$

$\underline{P} Z \underline{K} X \frac{1}{5} (5, 5, Z5) \Gamma \frac{1}{5} (10, Z5, 0)$

$(0, 4, 6) Z(1, 1, Z1) Z(2, Z1, 0) X \underline{K}$

$$\boxed{\underline{K} X(Z3, 4, 7)}$$

. $K(Z3, 4, 7)$:

$$, z_2 X \cos \frac{7r}{3} \Gamma i \sin \frac{7r}{3} X cis \frac{7r}{3} , z_1 X \cos r \Gamma i \sin r X cis r : .$$

$$, |z_1| X |z_2| X 1 |$$

$$\cdot \frac{f}{2} \Phi r \Phi f | : z_1$$

$$\cdot \operatorname{Im}\left(\frac{z_1}{z_2}\right) X 0 : \frac{z_1}{z_2} , \frac{z_1}{z_2} : \quad (1)$$

$$\frac{z_1}{z_2} X \frac{cis r}{cis \frac{7r}{3}} X cis\left(\frac{4r}{3}\right)$$

$$\sin\left(\frac{4r}{3}\right) X 0 \quad \left(\operatorname{Im}\left(\frac{z_1}{z_2}\right) X 0 \right)$$

$$\frac{4r}{3} X f k \quad | \quad r X \frac{3}{4} f k$$

$$\boxed{r X \frac{3}{4} f} \quad \left(\frac{f}{2} \Phi r \Phi f \right)$$

$$\boxed{z_1 X cis \frac{3}{4} f}$$

$$\boxed{z_2 X cis \frac{7}{4} f} \quad \left(z_2 X cis \left(\frac{7}{3} \frac{3}{4} f\right) \right)$$

$$\frac{z_1}{z_2} X cis (Zf) X Z1$$

$$\boxed{\frac{z_1}{z_2} X cis f X Z1}$$

$$\cdot \frac{z_1}{z_2} X cis f X Z1 , r X \frac{3}{4} f :$$

$$\cdot \operatorname{Re}(z_1 z_2) X 0 , z_1 z_2 : \quad (2)$$

$$z_1 z_2 X cis \frac{3}{4} f \quad cis \frac{7}{4} f X cis \frac{10}{4} f X cis 2.5f$$

$$z_1 z_2 X cis 0.5f X i \quad | \quad \operatorname{Re}(z_1 z_2) X 0$$

$$\cdot z_1 z_2 - :$$

$$\cdot w \times \frac{z_1}{z_2} \Gamma z_1 z_2 : \cdot$$

$$w \times z_1 \Gamma i$$

$$|w| \times \sqrt{1^2 + 1^2} \times \sqrt{2}$$

$$\tan \theta = \frac{1}{1} \times z_1$$

$$\boxed{w \times \sqrt{2} \text{cis } 135^\circ} \quad \left(\text{2nd quadrant} \right)$$

$$\cdot z^3 \times w^6 \cdot$$

$$z^3 \times w^6$$

$$w^6 \times (\sqrt{2} \text{cis } 135^\circ)^6$$

$$w^6 \times (\sqrt{2})^6 \text{cis } (135^\circ \times 6)$$

$$w^6 \times 8 \text{cis } (810^\circ)$$

$$\boxed{w^6 \times 8 \text{cis } (90^\circ) \times 8i}$$

$$z^3 \times 8 \text{cis } (90^\circ)$$

$$z_k \times \sqrt[3]{8} \text{cis } \left(\frac{90^\circ}{3} \Gamma \frac{360^\circ}{3} k \right)$$

$$z_k \times 2 \text{cis } (30^\circ \Gamma 120^\circ k)$$

$$\boxed{z_1 \times 2 \text{cis } 30^\circ \times \sqrt{3} \Gamma i}$$

$$\boxed{z_2 \times 2 \text{cis } 150^\circ \times \sqrt{3} \Gamma i}$$

$$\boxed{z_3 \times 2 \text{cis } 270^\circ \times 2i}$$

$$\cdot z_3 \times 2 \text{cis } 270^\circ \times 2i, z_2 \times 2 \text{cis } 150^\circ \times \sqrt{3} \Gamma i, z_1 \times 2 \text{cis } 30^\circ \times \sqrt{3} \Gamma i :$$

$$, x^2 \Gamma y^2 X4$$

(1) .

$$. 120 | - ,$$

$$, 60 |$$

$$2 \operatorname{cis} (30 | \Gamma 60 |) X \boxed{2 \operatorname{cis} (90 |) X 2i}$$

$$2 \operatorname{cis} (150 | \Gamma 60 |) X \boxed{2 \operatorname{cis} (210 |) X Z\sqrt{3} Zi}$$

$$2 \operatorname{cis} (270 | \Gamma 60 |) X \boxed{2 \operatorname{cis} (330 |) X \sqrt{3} Zi}$$

,

:

:

$$, (0, 2) - 2 \operatorname{cis} (90 |) X 2i$$

$$(Z\sqrt{3}, Z1) - 2 \operatorname{cis} (210 |) X Z\sqrt{3} Zi$$

$$. (\sqrt{3}, Z1) - 2 \operatorname{cis} (330 |) X \sqrt{3} Zi$$

,

,

(2)

$$. x^2 \Gamma y^2 X4$$

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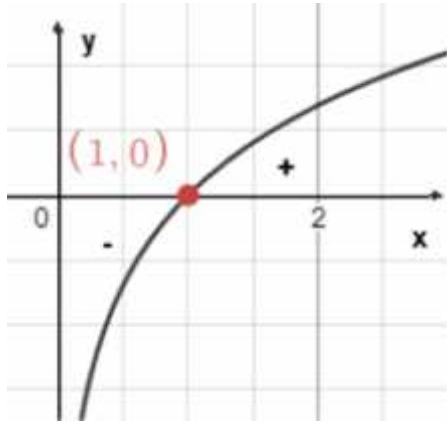
$$, 9$$

$$. 12$$

$$. 3 -$$

$$n \Psi 6$$

$$, n X 9, 12, 15, \dots :$$



$f(x) = x \ln(x)$ (1)

$f'(x) = \ln(x) + 1$

$f''(x) = \frac{1}{x}$ (2)

$f''(x) > 0$ for $x > 0$

$f'(1) = 1 > 0$

$f(1) = 1 \ln(1) = 0$

(3)

$x = 1$

$f(x) = x \ln(x)$

$f'(x) = \ln(x) + 1$

$f''(x) = \frac{1}{x}$

(4)

(5)

$$f'(x) = \frac{2e^x(e^x - b)}{(e^x - b)^2 - 1}$$

$e^x - b > 0$

$e^x > b$

$x \ln b > 0$

$f(\ln b) = \ln b \ln(e^{\ln b} - b) = \ln b \ln(b - b) = \ln b \ln(0)$

$f'(x) = \ln b + \frac{1}{x}$

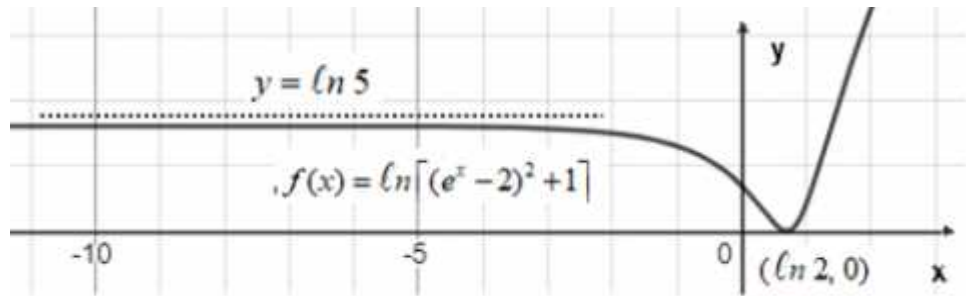
$f''(x) = \frac{1}{x^2}$

(6)

$(\ln b, 0)$

$$, \quad (\ln 2, 0), f(x) \times \ln (e^x - 2)^2 + 1, b \times 2 \quad (5)$$

$$.x| \quad Z| \quad , \quad y \times \ln 5 -$$



$$. \quad y \times \ln (b^2 - 1) \quad x| \quad Z| \quad .$$

$$. b \times 2 \quad b^2 - 1 \times 5, \quad y \times \ln 5 -$$

$$.x| \quad Z| \quad , f(x) \quad y \times \ln 5 \quad b \times 2 \quad :$$

$$. b \neq 0, \quad f(x) \quad b \times 2 \quad .$$

$$. f'(x) \times \frac{2e^x(e^x - 2)}{(e^x - 2)^2 + 1} - f(x) \times \ln (e^x - 2)^2 + 1 :$$

$$. x \quad ,$$

$$. x \quad b \times 2 \quad :$$

$$.x, f(x)Xe^x(xZ5) .$$

$$f'(x)Xe^x(xZ5)\Gamma e^xXe^x(xZ5\Gamma1) | \boxed{f'(x)Xe^x(xZ4)}$$

$$f''(x)Xe^x(xZ4)\Gamma e^xXe^x(xZ4\Gamma1) | \boxed{f''(x)Xe^x(xZ3)}$$

$$.f''(x)Xe^x(xZ3), f'(x)Xe^x(xZ4) - :$$

$$1 - , f^{(n)}(x)Xe^x(xZ5\Gamma n) :$$

$$f'''(x)Xe^x(xZ3)\Gamma e^xXe^x(xZ3\Gamma1) | \boxed{f'''(x)Xe^x(xZ2)} \text{ o.k.}$$

$$f^{(3)}(x)Xe^x(xZ5\Gamma3)Xe^x(xZ2)$$

$$.nX3, f'''(x)Xe^x(xZ2) :$$

$$. f^{(n)}(x)Xe^x(xZ5\Gamma n)$$

$$. f^{(n)}(0)Xe^0(0Z5\Gamma n)XnZ5 | \boxed{(0, nZ5)} - xX0 : y \quad (1)$$

$$. 0XxZ5\Gamma n | xX5Zn | \boxed{(5Zn, 0)} - yX0 : x$$

$$.(5Zn, 0), (0, nZ5) :$$

$$. f^{(n)}(x) \quad (2)$$

$$f(x) | \Gamma | e^x | \Gamma | x | \Gamma |$$

$$, xZn\Gamma5 | Z | , e^x | 0^\Gamma | x | Z |$$

$$yX0$$

$$.() x | Z | , yX0 :$$

$$. f^{(n)}(x) \quad (3)$$

$$f^{(n\Gamma1)}(x)Xe^x(xZ4\Gamma n)$$

$$0XxZ4\Gamma n | xX4Zn$$

$$f^{(n\Gamma2)}(x)Xe^x(xZ3\Gamma n)$$

$$f^{(n\Gamma2)}(4Zn)Xe^{4Zn}(4ZnZ3\Gamma n)Xe^{4Zn} \Psi 0 \min$$

$$f^{(n)}(4Zn)Xe^{4Zn}(4ZnZ5\Gamma n)XZe^{4Zn} | \boxed{(4Zn, Ze^{4Zn}) \min}$$

$$.(4Zn, Ze^{4Zn}) :$$

$$f^{(k)}(x) X e^x(x Z5 \Gamma k), f^{(m)}(x) X e^x(x Z5 \Gamma m) \quad (4)$$

$$f^{(k)}(x) X f^{(m)}(x)$$

$$e^x(x Z5 \Gamma k) X e^x(x Z5 \Gamma m) \quad / : e^x \Psi 0$$

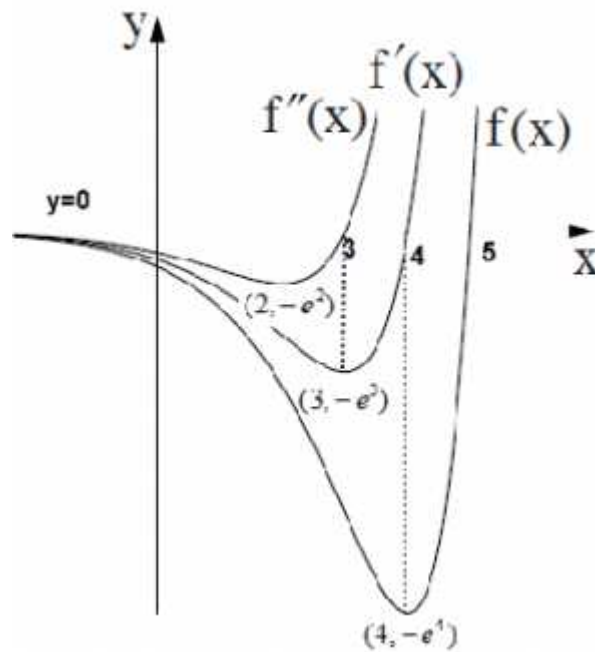
$$x Z5 \Gamma k X x Z5 \Gamma m$$

$$k X m$$

$$f^{(m)}(x) - f^{(k)}(x), \quad k, m, \\ m | k, \quad f^{(m)}(x) - f^{(k)}(x) :$$

(5)

	$(4 Z n, Z e^{4 Z n})$	x $(5 Z n, 0)$	y $(0, n Z 5)$	
$x Z , y X 0$	$(4, Z e^4)$	$(5, 0)$	$(0, Z 5)$	$f(x)$
$x Z , y X 0$	$(3, Z e^3)$	$(4, 0)$	$(0, Z 4)$	$f'(x)$
$x Z , y X 0$	$(2, Z e^2)$	$(3, 0)$	$(0, Z 3)$	$f''(x)$



: $F(x)$, .

$$F(x) X \int f(x) dx XX e^x(x Z5) dx X e^x(x Z6) \Gamma c$$

$$. 0 X e^0(0 Z6) \Gamma c \quad | \quad c X 6 \quad | \quad \boxed{F(x) X e^x(x Z6) \Gamma 6}$$

$$F'(x) X e^x(x Z6) \Gamma e^x \quad | \quad F'(x) X e^x(x Z5) \quad | \quad \boxed{F'(x) X f(x) o.k.}$$

$$. F(x) X e^x(x Z6) \Gamma 6 :$$