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[redacted] [redacted]

2 : 2025 – 4 :

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(3) : _____

.1 $A = \frac{1134}{729} - 2 \div \frac{9}{5}$.

.2 $B = \sqrt{147} - 2\sqrt{27} + 5\sqrt{3}$ $b\sqrt{3}$ b .

.3 $C = \frac{25 \times 10^{-2} \times \left(3 \times 10^{-3}\right)^2}{2 \times 10^5}$.

(2,5) : _____

$E = (2x-3)^2 - 36$:

.1 E.

.2 E $x = \sqrt{2}$.

.3 $E = 64$.

(3) : _____

RST $RS = 36\,\text{mm}$ $RT = 48\,\text{mm}$ $ST = 60\,\text{mm}$.

.1 RST .

.2 $\widehat{RST}$ $\tan\widehat{RST}$.

.3 M $[TR)$ $TM = 72\,\text{mm}$ N $[TS)$ $\frac{TN}{TS} = \frac{3}{2}$.

– $(MN) // (RS)$.

.4 : $p = \frac{MNT}{RST}$.

(3,5) : _____

$\left(O; \vec{i}, \vec{j}\right)$. .

$A(3;1)$ $B(-1;-1)$.

.1 $\overrightarrow{AB}$ AB.

.2 C A B $90°$

D : $\overrightarrow{BD} = \overrightarrow{BA} + \overrightarrow{BC}$.

.3 $ABCD$.

.4 $ABCD$.

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_____ : (8)

.1

6 4

.108000DA

.123000DA 6 5

–

.20%

.2

:

. 24DA :

16DA 2400DA :

.

$g(x)$ $f(x)$ x ( )

.

: $g(x)$ $f(x)$ x –

x	0	450	500
$f(x)$			
$g(x)$			

: g f ( )

. 2400DA 1cm 50km 1cm

. $f(x) < g(x)$ ( )

. ( )

:

425	300	780	431		
800	131	630		431	
975	582		630	780	
703		582	131	300	
	703	975	800	425	

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(3) :

.1 pgcd(1134;729) .

$$\begin{cases} 1134 = 729 \times 1 + 405 \\ 729 = 405 \times 1 + 324 \\ 405 = 324 \times 1 + 81 \\ 324 = 81 \times 4 + 0 \end{cases} \Rightarrow \text{PGCD}(1134;729) = 81$$

$$A = \frac{1134}{729} - 2 \div \frac{9}{5} = \frac{1134 \div 81}{729 \div 81} - 2 \times \frac{5}{9} = \frac{14}{9} - \frac{10}{9} = \boxed{\frac{4}{9}}$$

.2 :

$$B = \sqrt{147} - 2\sqrt{27} + 5\sqrt{3} = \sqrt{49 \times 3} - 2\sqrt{9 \times 3} + 5\sqrt{3} = 7\sqrt{3} - 2 \times 3\sqrt{3} + 5\sqrt{3}$$
$$= 7\sqrt{3} - 6\sqrt{3} + 5\sqrt{3} = (7 - 6 + 5)\sqrt{3} = \boxed{6\sqrt{3}}$$

.3 :

$$C = \frac{25 \times 10^{-2} \times (3 \times 10^{-3})^2}{2 \times 10^5} = \frac{25 \times 10^{-2} \times 3^2 \times 10^{-3 \times 2}}{2 \times 10^5} = \frac{25 \times 10^{-2} \times 9 \times 10^{-6}}{2 \times 10^5}$$
$$= \frac{25 \times 9}{2} \times \frac{10^{-2} \times 10^{-6}}{10^5} = 112,5 \times 10^{-2+(-6)-5} = 1,125 \times 10^2 \times 10^{-13} = 1,125 \times 10^{2+(-13)}$$
$$\boxed{C = 1,125 \times 10^{-11}}$$

(3) :

.1 E :

$$E = (2x-3)^2 - 36 = (2x)^2 - 2 \times 2x \times 3 + 3^2 - 36 = 4x^2 - 12x + 9 - 36 = \boxed{4x^2 - 12x - 27}$$

.2 E $x = \sqrt{2}$:

$$E = 4\left(\sqrt{2}\right)^2 - 12\sqrt{2} - 27 = 4 \times 2 - 12\sqrt{2} - 27 = 8 - 27 - 12\sqrt{2} = \boxed{-19 - 12\sqrt{2}}$$

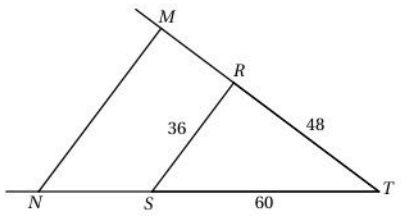
.3 $E = 64$ $(2x-3)^2 - 36 = 64$ $(2x-3)^2 - 36 - 64 = 0$ $(2x-3)^2 - 100 = 0$

$(2x-3)^2 - 10^2 = 0$ $(2x-3+10)(2x-3-10) = 0$ $(2x+7)(2x-13) = 0$

$$\begin{cases} 2x+7=0 \\ 2x=-7 \\ x=\dfrac{-7}{2} \end{cases} \qquad \begin{cases} 2x-13=0 \\ 2x=13 \\ x=\dfrac{13}{2} \end{cases}$$

$\dfrac{-7}{2}$ $\dfrac{13}{2}$.

(3) :



.1 :

$$\begin{cases} ST^2 = 60^2 = 3600 \\ RS^2 + RT^2 = 36^2 + 48^2 = 1296 + 2304 = 3600 \end{cases}$$

$$RS^2 + RT^2 = ST^2$$

R RST .

.2 R RST :

$$\tan\widehat{RST} = \frac{RT}{RS} = \frac{48}{36} \approx 1,333$$

$\widehat{RST} = 53°$ $\widehat{RST} = 1,333$ $\tan^{-1}$ 2nde tan $\approx 53,1°$.

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.3 : $\frac{TM}{TR} = \frac{72}{48} = 1,5$ $\frac{TN}{TS} = \frac{3}{2} = 1,5$.$\frac{TM}{TR} = \frac{TN}{TS}$

$M\ R\ T$ $N\ S\ T$

$(MN)\ //\ (RS)$.

.4 MNT RST RST MNT

$k = \frac{TN}{TS} = \frac{3}{2} = 1,5$ $p = \frac{MNT}{RST} = k^2 = (1,5)^2 = 2,25$

(3) : _____

.1 : $\begin{cases} x_B - x_A = -1 - 3 = -4 \\ y_B - y_A = -1 - 1 = -2 \end{cases}$ $\overrightarrow{AB}\begin{pmatrix} -4 \\ -2 \end{pmatrix}$

:

$AB = \sqrt{(x_B - x_A)^2 + (y_B - y_A)^2}$

$= \sqrt{(-4)^2 + (-2)^2} = \sqrt{16+4} = \sqrt{20} = \sqrt{4 \times 5} = \boxed{2\sqrt{5}\,\text{cm}}$

.2 .( ) $D\ C$

.3 $90°$ B A C

$BA = BC$ $\widehat{ABC} = 90°$.

$ABCD$ $\overrightarrow{BD} = \overrightarrow{BA} + \overrightarrow{BC}$

.( )

.

$ABCD$

.4 $ABCD$ M ( )

$C(-3;3)$: .( ) $[AC]$

$x_M = \frac{x_A + x_C}{2} = \frac{3 + (-3)}{2} = \frac{0}{2} = 0$

$y_M = \frac{y_A + y_C}{2} = \frac{1+3}{2} = \frac{4}{2} = 2$

$M(0;2)$.

(8) : _____

.1 b a .

$\left(1 + \frac{20}{100}\right) b = 1,2b$.

: $6(b+4a) = 108000$ $b + 4a = 108000 \div 6$

$4a + b = 18000$

: $5(1,2b + 6a) = 123000$

$1,2b + 6a = 123000 \div 5$ $6a + 1,2b = 24600$

: $\begin{cases} 4a + b = 18000 \ldots\ldots (1) \\ 6a + 1,2b = 24600 \ldots\ldots (2) \end{cases}$

: $(-1,2)$ (1) $-4,8a - 1,2b = -21600$

: (2) $-4,8a - 1,2b + 6a + 1,2b = -21600 + 24600$

$1,2a = 3000$ $a = 3000 \div 1,2 = 2500$

: (1) $b = 18000 - 4a = 18000 - 4 \times 2500 = 18000 - 10000 = 8000$

: _____ $2500\,\text{DA}$ $8000\,\text{DA}$ $1,2 \times 8000 = 9600\,\text{DA}$

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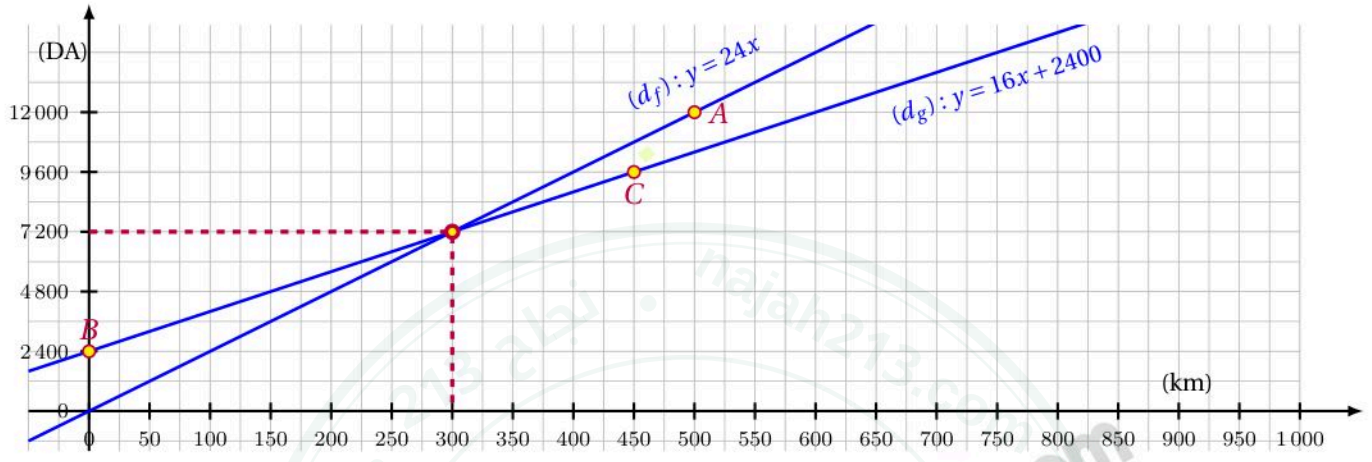
.2 ( ) : $f(x) = 24x$ $g(x) = 16x + 2400$.

x	0	450	500
$f(x)$	$24 \times 0 = 0$	$24 \times 450 = 10800$	$24 \times 500 = 12000$
$g(x)$	$16 \times 0 + 2400 = 2400$	$16 \times 450 + 2400 = 9600$	$16 \times 500 + 2400 = 10400$

( ) f (OA) $A(500, 12000)$.

g (BC) $B(0; 2400)$ $C(450; 9600)$.

( ).



( ) $f(x) < g(x)$ f (d_f) g (d_g)

$x < 300$.

:

( ) •

131 km 300 km

.

•

582 km 300 km

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