

Info 1

Midterm 1, Fall 2023

NAME*

NEPTUN CODE*

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1.

(A)

(B)

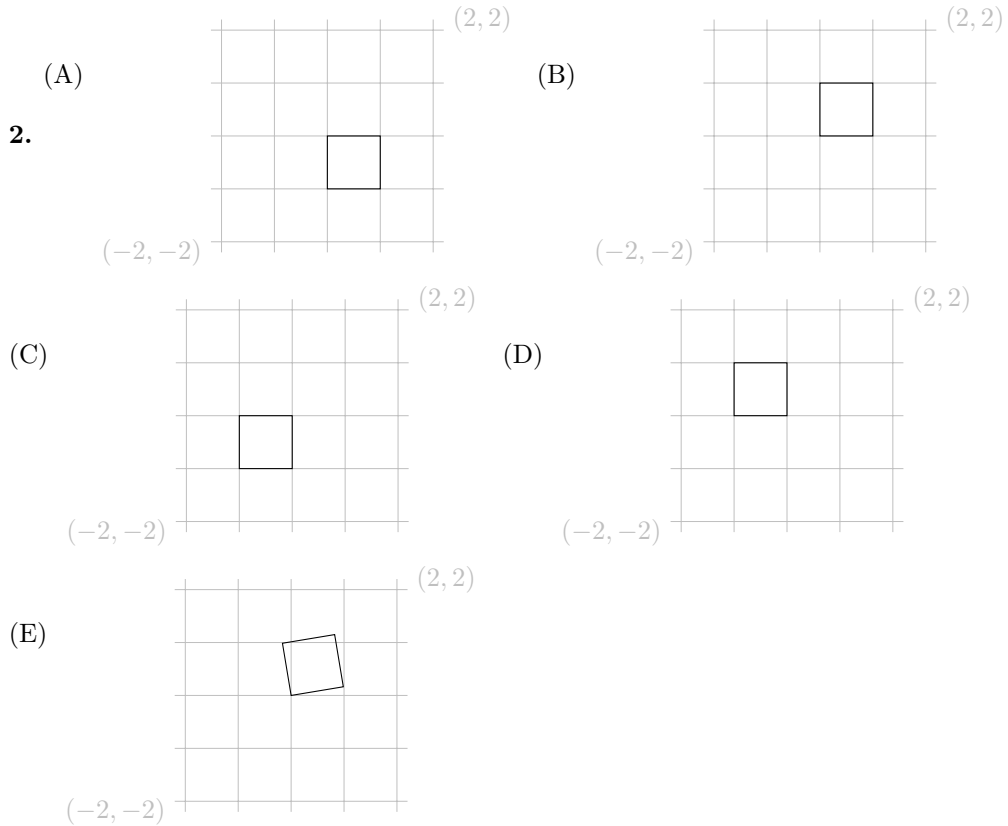
(C)

(D)

(E) wrong source

Source	Output
<pre>\begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \draw (0,0) foreach \x in {0, 60,..., 300} {-- ++(\x:1) }; \end{tikzpicture}</pre>	B
<pre>\begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \draw (0,0) foreach \x in {300, 240,..., 0} {-- ++(\x:1) }; \end{tikzpicture}</pre>	C
<pre>\begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \foreach \x in {0, 60,..., 300} {\draw (0,0) -- (\x:1) }; \end{tikzpicture}</pre>	E
<pre>\begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \foreach \x in {0, 60,..., 300} {\draw (0,0) -- (\x:1) }; \end{tikzpicture}</pre>	D

<pre> \begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \draw (0,0) foreach \x in {0, 60,..., 300} {-- (\x:1) }; \end{tikzpicture} </pre>	A
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Source	Output
<pre> \begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \draw[yscale=-1] (0,0) rectangle (1,1) ; \end{tikzpicture} </pre>	A
<pre> \begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \draw[rotate=3*pi] (0,0) rectangle (1,1) ; \end{tikzpicture} </pre>	E

<pre>\begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \draw[shift={(0,1)}] (0,0) rectangle (1,-1) ; \end{tikzpicture}</pre>	B
<pre>\begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \draw[rotate={deg(pi/2)}] (0,0) rectangle (1,1) ; \end{tikzpicture}</pre>	D
<pre>\begin{tikzpicture} \draw[very thin, gray!50](-2.2,-2.2) node[below,left]{\(-2,-2\)} grid (2.2,2.2) node[above,right]{\\$(2,2)\\$}; \draw[scale=-1] (0,0) rectangle (1,1) ; \end{tikzpicture}</pre>	C

3. (A) 4 (B) $1/2$ (C) 1 (D) 2

Source	Output
<code>a = mod(5,3); 1/a</code>	D
<code>a = 5 % 3; a^2</code>	A
<code>a = 5 % 3; 1/a</code>	B
<code>a = mod(5,3); a^2</code>	C

4. (A) y^3+x^2 (B) y^3+y^2 (C) x^3+x^2

Source	Output
<code>var('y'); (x^2+y^3).subs(x=y).subs(y=x)</code>	C
<code>var('y'); x^2+y^3.subs(x=y)</code>	A
<code>var('y'); (x^2+y^3).subs(x=y)</code>	B

5. (A) $y^2 + 2$ (B) $(y - 1.41421356237310*I) * (y + 1.41421356237310*I)$
(C) $(y + 1) * (y + 2)$

Source	Output
<code>y = polygen(CC,'y'); print(factor(y^2 + 2))</code>	B
<code>y = polygen(GF(3),'y'); print(factor(y^2 + 2))</code>	C
<code>y = polygen(QQ,'y'); print(factor(y^2 + 2))</code>	A