


Topic: calculators and complex variables.

① store a variable

Ex: $2+5i$ store in \boxed{A}

$2+5i \rightarrow A$	$2+5i$
A	$2+5i$




 STO button

Ex: $-1+3i \rightarrow \boxed{B}$

$-1+3i \rightarrow B$	$-1+3i$
B	$-1+3i$

② divide variables

A/B	$(2+5i)/(-1+3i)$
	$1.3-1.1i$
Ans \rightarrow Frac	$\frac{13}{10} - \frac{11}{10}i$



 Math menu
 Frac option.

for decimal \rightarrow fraction

If it keeps giving you a long decimal, do it manually - probably a radical.

③ multiply

AB	
	$-17+i$

④ reciprocal.
 $1 / (2+5i)$
 or: $(2+5i)^{-1}$

A^{-1}
$.0689655172 - .17i$
Ans \rightarrow Frac
$\frac{2}{29} - \frac{5}{29}i$

1 Which of the following is the simplified form of the expression $(3 - 2i)(-7 + 4i)$?

A) $-21 + 18i$

B) $-4 + 2i$

C) $-21 - 8i^2$

D) $-13 + 26i$

2 What is a simplified form of the expression $-i + (7 - 5i) - 3(2 - 3i)$?

A) $8 - 3i$

B) $1 - 6i$

C) $8 - 9i$

D) $1 + 3i$

3 What are the solutions to the equation $x^2 - 6x + 13 = 0$?

A) $-3 \pm 2i$

B) $3 \pm 2i$

C) $3 \pm 2i\sqrt{22}$

D) $3 \pm 8i$

4 What are the solution(s) for x in the system $\begin{cases} x^2 + y^2 = 1 \\ y = 2x - 1 \end{cases}$?

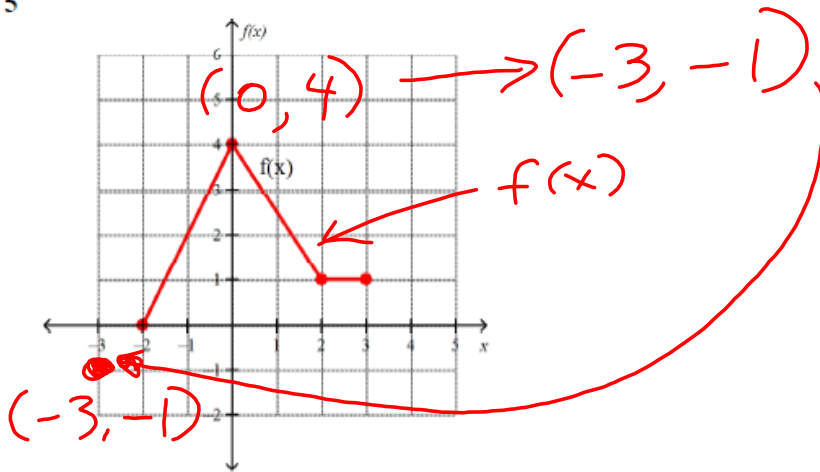
A) $x = 1, 0$

B) $x = -\frac{4}{5}, 0$

C) $x = \frac{4}{5}, 0$

D) $x = 1, \frac{4}{5}$

5

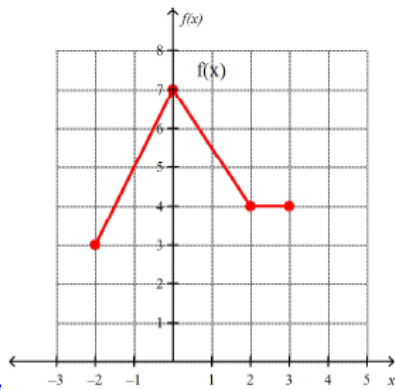


Given the graph of $f(x)$, which of the following is the graph of $f(x+3) - 5$?

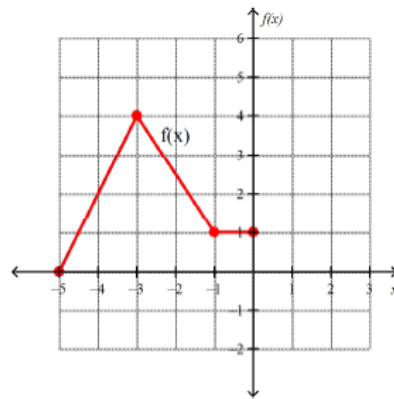
$$f(x+3) - 5$$

$(x+3)^2 - 5$
 vertex
 $(-3, -5)$
 left 3 down 5

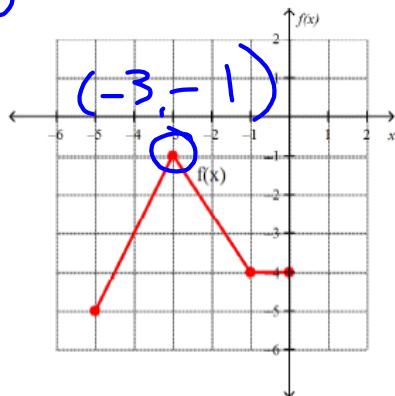
A)



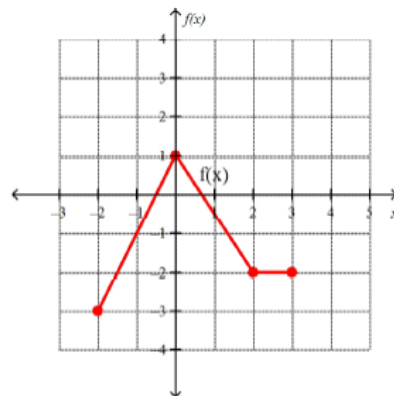
C)



B)



D)



translations of $f(x)$:

① $f(x-3) + 2$: right 3
up 2

② $f(x+7) - 15$: left 7
down 15

6 Which of the following are the solutions to $(x+5)^2 = 36$?

A) $x = -1, 11$

B) $x = -11, 1$

C) $x = -5, 6$

D) $x = -23, 13$

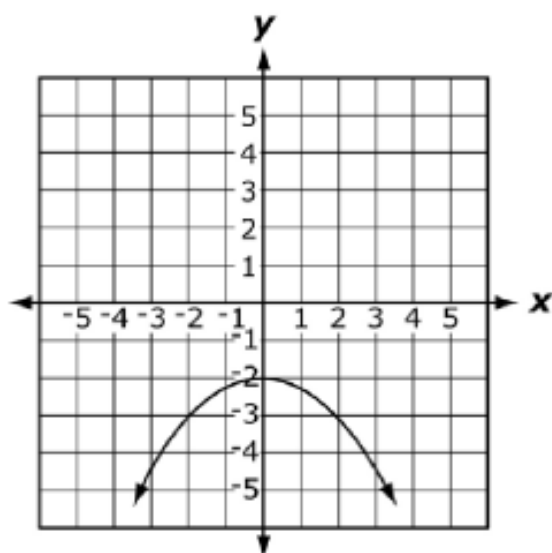
7 Which equation is would have a range where $y \geq -12$?

A) $y = \frac{1}{3}x(x+4)$

C) $y = 3x^2 + 12x$

B) $y = x^2 + 4x - 12$

D) $y = (x+2)^2 - 12$



Which function represents this graph?

A) $f(x) = -\frac{1}{4}x^2 - 2$

C) $f(x) = -4x^2 - 2$

B) $f(x) = \frac{1}{4}x^2 - 2$

D) $f(x) = 4x^2 - 2$

- 9 A man throws a ball off the top of a building and records the height of the ball at different times in the table below.

time (seconds)	0	1	2
height (feet)	45	63	48

He finds that the height of the ball as a function of time can be modeled using the equation $-16.5t^2 + 34.5t + 45 = h(t)$. Using the model, approximate (to the nearest hundredths) when the ball hits the ground.

- A) 4.26 seconds
B) 3.00 seconds
C) 4.06 seconds
D) 5.61 seconds
- 10 A company is selling an item and determines that the profit from selling the item for a price of x dollars is given by the function below.

$$P(x) = -\frac{1}{4}(x - 16)^2 + 4$$

Which price will maximize the profit?

- A) \$4
B) \$12
C) \$16
D) \$20