1. Which of these represent a linear function?

Select all that apply

☐ A. $(3, 6), (0, 2), (3, 5)$
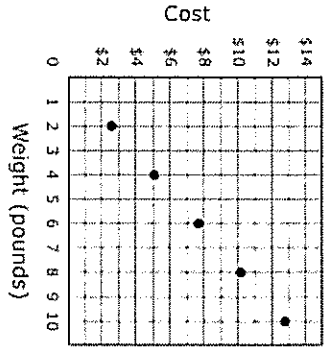
☐ B.
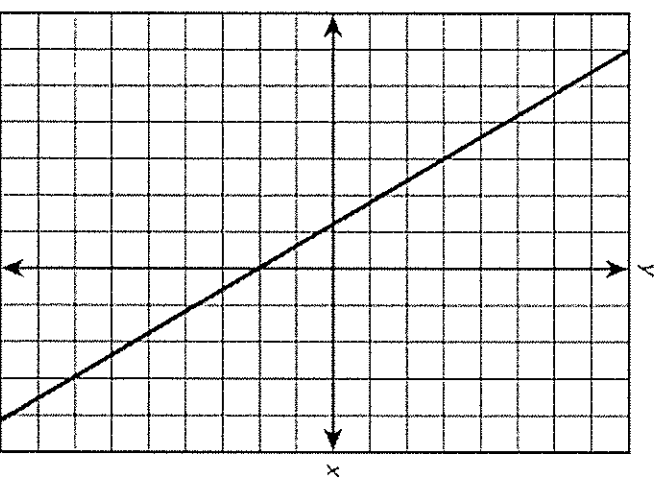
☐ C.

x	y
2	4
2	2
2	0
2	-2

☐ D. For each square whose sides have length s, the perimeter is 4s.

☐ E. $y = |x|$

2. The graph shows the relationship between the weight, in pounds, of Vidalia onions and their cost.

Cost

$14										
$12										
$10										
$8										
$6						•				
$4			•							
$2	•									
0	1	2	3	4	5	6	7	8	9	10

Weight (pounds)

Which best estimates the cost per pound?

A. $0.78

B. $1.29

C. $2.58

D. $10.32

3. What are the solutions to the equation $(2x + 1)^2 - (x + 13) = 3x^2 - 2x + 2$?

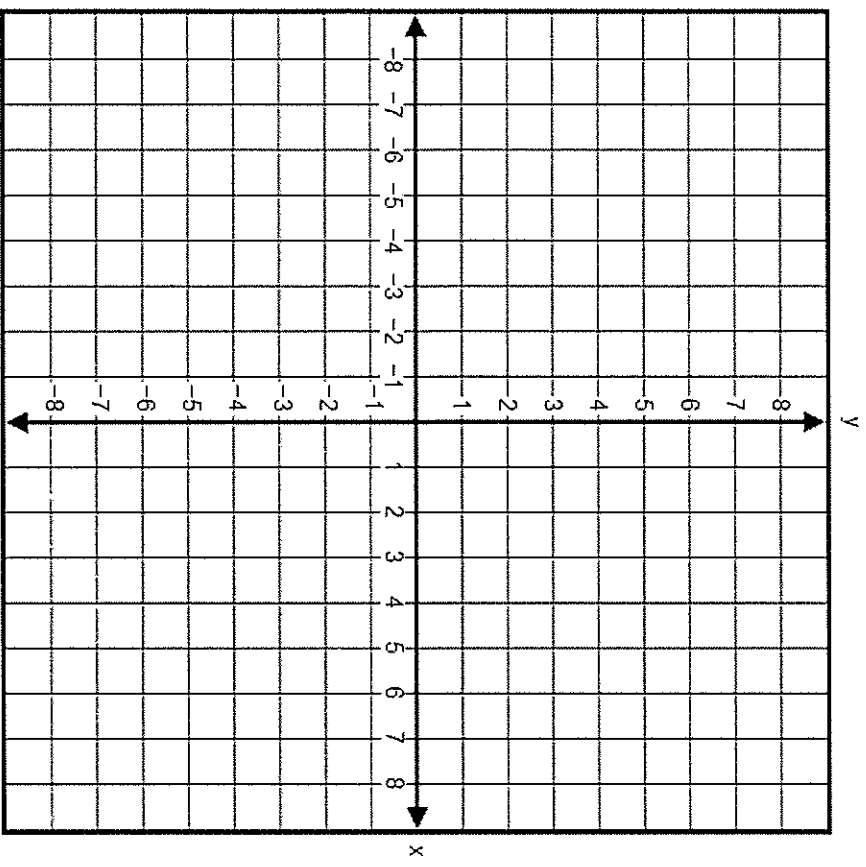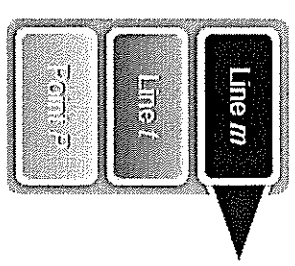Enter your answers in the spaces provided. Enter **only** your answers.

$x = \square$

$x = \square$

y^x	+	−	×	÷	(·)	%
	$\sqrt{\ }$	$\sqrt[3]{\ }$	=	□□	□□	□□

4. Graph lines m and t on the xy-coordinate plane shown. Then plot the point of intersection P.

- Line m : $y = -\dfrac{2}{3}x - 4$
- Line t : $y = x + 6$

To graph a line, select two points on the coordinate plane. A line will be drawn through the points.

Select the place on the coordinate plane to plot the point.

| Line m | Line t | Point P |

5. Multiply the polynomials $(x+3)(2x-4)$. What is the product in the form $ax^2 + bx + c$?

Enter your answers in the boxes

$a =$ ☐

$b =$ ☐

$c =$ ☐

6. A set production designer creates a right circular cylindrical pillar. The designer knows the amount of material used for the surface of the pillar and needs to find the height for a reinforcement rod

Use $A = (2\pi r)h + \pi r^2$, where r represents the radius, h represents the height of the pillar, and A represents the surface area of the pillar. What is a formula for h in terms of the other variables that can be used to find the height?

A $h = \frac{A - \pi r^2}{2\pi r}$

B $h = \frac{A + \pi r^2}{2\pi r}$

C $h = \frac{A}{3\pi r^2}$

D $h = \frac{A}{2\pi r} - \frac{1}{2}$

7. Select the values and signs from the drop-down menus that correctly complete the solution by factoring.

$$x^2 - 4x + 3 = 0$$

$(x$ [Choose. ▾ | + | -] [Choose. ▾ | 1 | 2 | 3 | 4] $)(x$ [Choose. ▾ | + | -] [Choose. ▾ | 1 | 2 | 3 | 4] $)$

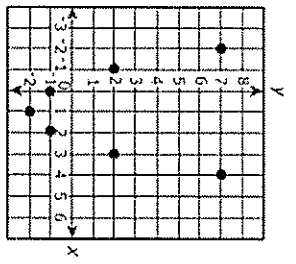$x =$ [Choose. ▾ | -4 | -3 | 1 | 2] $; x =$ [Choose. ▾ | -2 | -1 | 3 | 4]

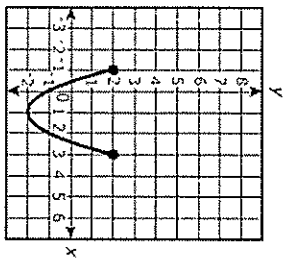8. Which is the graph of the function $y = (x - 1)^2 - 2$?
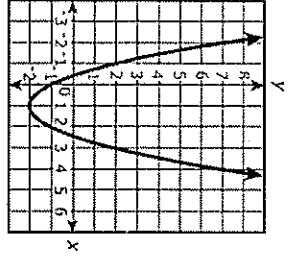
A.
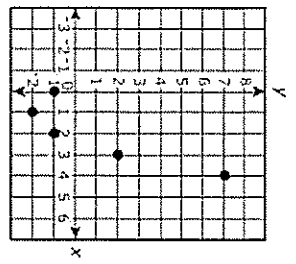
B.

C.

D.

9. Carrie wants to find out how the area of a circle will change as the radius increases in length. Carrie makes a table.

Area (square feet)	19.63	38.47	63.59	94.99	132.67
Radius (feet)	2.5	3.5	4.5	5.5	6.5

What is the average rate of change in the area as the radius changes from 2.5 to 5.5 feet?

Enter your answer in the box.

[   ] square feet per foot

10. On the coordinate plane provided, graph the line with equation $5y - 3x = -15$ by selecting the x- and y- intercepts. A correct response must have the points placed at the intercepts.

Select the places on the coordinate plane to plot the points