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## Revision Sheet

<b>Student's Name</b>	.....	<b>Class</b>	<b>10 Adv</b>	<b>Date</b>	<b>/11/2019</b>
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<b>1</b>	What is the solution of the next system of equations? $2x - 3y = 9$ $4x + 3y = 9$		<b>/1</b>
	<b>A</b>	(0, 3)	
	<b>B</b>	(1, 3)	
	<b>C</b>	(3, -1)	
	<b>D</b>	(3, 0)	

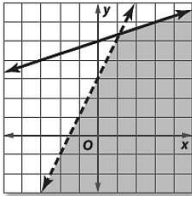
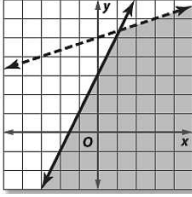
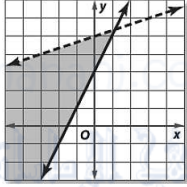
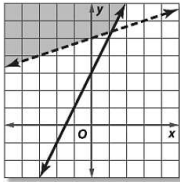
<b>2</b>	What is the solution of the next system of equations? $x - 2y + 3z = 1$ $4y - 4z = 12$ $8y - 14z = 0$		<b>/1</b>
	<b>A</b>	(-2, 7, 1)	
	<b>B</b>	(3, 7, 4)	
	<b>C</b>	(7, 4, 3)	
	<b>D</b>	(1, 8, 0)	

<b>3</b>	Which statement best describes the graph of the two equations? $4y = x + 8$ $12y = 3x + 2$		<b>/1</b>
	<b>A</b>	The lines are parallel	
	<b>B</b>	The lines are the same	
	<b>C</b>	The lines intersect in only one point	
	<b>D</b>	The lines intersect in more than one point, but are not the same	

<b>4</b>	Triangle DEF has vertices D (-6, 2), E (3, 5), and F (8, -7). Evaluate the determinant below to find the area of the triangle.		<b>/1</b>
	<b>A</b>	54.5 square units	$A = \frac{1}{2} \begin{vmatrix} -6 & 2 & 1 \\ 3 & 5 & 1 \\ 8 & -7 & 1 \end{vmatrix}$
	<b>B</b>	58 square units	
	<b>C</b>	60 square units	
<b>D</b>	61.5 square units		

<b>5</b>	What is the value of $\begin{vmatrix} 2 & 3 & -1 \\ 0 & 2 & 4 \\ -2 & 5 & 6 \end{vmatrix}$		<b>/1</b>
	<b>A</b>	-44	
	<b>B</b>	$-\frac{1}{4}$	
	<b>C</b>	$\frac{1}{4}$	
<b>D</b>	44		

<b>6</b>	Find $\begin{bmatrix} 3 & 1 \end{bmatrix} \cdot \begin{bmatrix} 2 \\ 5 \end{bmatrix}$ , if possible.		<b>/1</b>
	<b>A</b>	$[-3]$	
	<b>B</b>	$\begin{bmatrix} 8 & -4 \\ 12 & 6 \end{bmatrix}$	
	<b>C</b>	$[11]$	
<b>D</b>	undefined		

<b>7</b>	Which graph shows the solution of the system of inequalities $y \leq 2x + 3$ $y < \frac{1}{3}x + 5$		<b>/1</b>
	<b>A</b>		
	<b>B</b>		
	<b>C</b>		
	<b>D</b>		

<b>8</b>	Solve the system of equations $x + y + 2z = 6$ $2x + 5z = 12$ $x + 2y + 3z = 9$		<b>/1</b>
	<b>A</b>	(1, 1, 3)	
	<b>B</b>	(1, 1, 2)	
	<b>C</b>	(3, 1, 2)	
	<b>D</b>	(2, 1, 1)	

<b>9</b>	Find XY if $X = \begin{bmatrix} 0 & -6 \\ 3 & 5 \end{bmatrix}$ and $Y = \begin{bmatrix} 8 \\ -1 \end{bmatrix}$		<b>/1</b>
	<b>A</b>	$\begin{bmatrix} 9 \\ -5 \end{bmatrix}$	
	<b>B</b>	$\begin{bmatrix} -3 \\ 2 \end{bmatrix}$	
	<b>C</b>	$\begin{bmatrix} 6 \\ 19 \end{bmatrix}$	
	<b>D</b>	Can't be solved	

<b>10</b>	Evaluate $\begin{vmatrix} 4 & -6 \\ 2 & 5 \end{vmatrix}$	<b>/1</b>
	<b>A</b>	32
	<b>B</b>	8
	<b>C</b>	-32
	<b>D</b>	-8

<b>11</b>	What is the inverse of $\begin{bmatrix} 6 & -3 \\ -8 & 4 \end{bmatrix}$		<b>/1</b>
	<b>A</b>	$\begin{bmatrix} \frac{1}{12} & \frac{1}{16} \\ \frac{1}{6} & \frac{1}{8} \end{bmatrix}$	
	<b>B</b>	$\begin{bmatrix} 4 & 8 \\ 3 & 6 \end{bmatrix}$	
	<b>C</b>	$\begin{bmatrix} 4 & -8 \\ -3 & 6 \end{bmatrix}$	
	<b>D</b>	Not exist	

<b>12</b>	Write a quadratic equation in standard form with roots $-4$ and $\frac{1}{3}$		<b>/1</b>
	<b>A</b>	$3x^2 + 11x - 4 = 0$	
	<b>B</b>	$4x^2 + 3x - 11 = 0$	
	<b>C</b>	$5x^2 + 11x - 3 = 0$	
	<b>D</b>	$3x^2 + 21x - 7 = 0$	

<b>13</b>	For which equation is the axis of symmetry $x = 4$ ?		<b>/1</b>
	<b>A</b>	$f(x) = x^2 - 4x + 3$	
	<b>B</b>	$f(x) = x^2 - 8x + 7$	
	<b>C</b>	$f(x) = x^2 + 8x - 3$	
	<b>D</b>	$f(x) = x^2 + 4x + 2$	

<b>14</b>	Simplify $(5 - 3i)(4 + 2i)$		<b>/1</b>
	<b>A</b>	$26 + 2i$	
	<b>B</b>	$2 - 26i$	
	<b>C</b>	$26 - 2i$	
	<b>D</b>	$2 + 26i$	

<b>15</b>	Which value of $c$ makes the trinomial $x^2 - 12x + c$ a perfect square		<b>/1</b>
	<b>A</b>	$6$	
	<b>B</b>	$12$	
	<b>C</b>	$36$	
	<b>D</b>	$144$	

<b>16</b>	Solve $x^2 - 2x = 15$ by completing the square		<b>/1</b>
	<b>A</b>	-4, -1	
	<b>B</b>	-3, 5	
	<b>C</b>	-2, 3	
	<b>D</b>	5, 7	

<b>17</b>	What are the roots of $y = 2x^2 + 10x - 48$		<b>/1</b>
	<b>A</b>	-5, 4	
	<b>B</b>	-6, 1	
	<b>C</b>	-8, 3	
	<b>D</b>	2, 3	

<b>18</b>	Solve the following equation using any method $-9x^2 + 40x + 84 = 0$		<b>/1</b>
	<b>A</b>	14, -9	
	<b>B</b>	$-6, \frac{14}{9}$	
	<b>C</b>	9, 6	
	<b>D</b>	$6, -\frac{14}{9}$	

<b>19</b>	Determine whether the function has a maximum or minimum value. State the maximum or minimum value of the function $f(x) = -x^2 + 6x$		<b>/1</b>
	<b>A</b>	Max at $y = 9$	
	<b>B</b>	Min at $y = 9$	
	<b>C</b>	Max at $y = -27$	
	<b>D</b>	Min at $y = -27$	

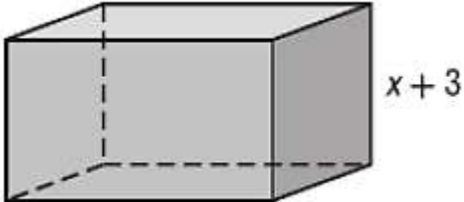
<b>20</b>	Which equation below has roots at $-6$ and $\frac{1}{5}$		<b>/1</b>
	<b>A</b>	$0 = 5x^2 - 29x - 6$	
	<b>B</b>	$0 = 5x^2 + 31x + 6$	
	<b>C</b>	$0 = 5x^2 + 29x - 6$	
	<b>D</b>	$0 = 5x^2 - 31x + 6$	

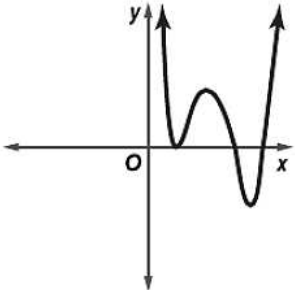
<b>21</b>	Simplify $(3 - 4i) - (9 - 5i)$		<b>/1</b>
	<b>A</b>	$-6 - 9i$	
	<b>B</b>	$-6 + i$	
	<b>C</b>	$12 - 9i$	
	<b>D</b>	$6 + i$	

<b>22</b>	Identify the vertex of the $3x^2 + 6x = 2 + y$		<b>/1</b>
	<b>A</b>	$(5, -1)$	
	<b>B</b>	$(-1, -5)$	
	<b>C</b>	$(-5, -1)$	
	<b>D</b>	$(1, -5)$	

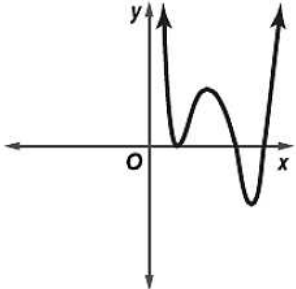
<b>23</b>	Simplify $(4n^2 - 6n + 5) - (6n^2 + 3n - 1)$		<b>/1</b>
	<b>A</b>	$-2n^2 - 3n + 4$	
	<b>B</b>	$-2n^2 - 9n + 6$	
	<b>C</b>	$2n^2 + 3n - 4$	
	<b>D</b>	$2n^2 + 9n - 6$	



24	The volume of the rectangular prism is $6x^3 + 19x^2 + 2x - 3$ . Which polynomial expression represents the area of the base?		/1
	A	$6x^4 + 37x^3 + 59x^2 + 3x - 9$	
	B	$6x^2 + x + 1$	
	C	$6x^2 + x - 1$	
	D	$6x + 1$	

25	Find $p(-2)$ if $p(x) = \frac{2}{3}x^3 + \frac{1}{3}x^2 - 5x$		/1
	A	0	
	B	16	
	C	-6	
	D	6	

26	Simplify $(2b)^2(6b)^3$		/1
	A	$864b^5$	
	B	$24b^5$	
	C	$864b^6$	
	D	$288b^6$	

27	How many unique real zeros does the graph have?		/1
	A	0	
	B	2	
	C	3	
	D	5	

28	If $h(x) = x^3 - 2x^2 + 6$ , what is the value of $2h(3a)$ ?		/1
	A	$27a^3 - 18a^2 + 6$	
	B	$54a^3 - 36a^2 + 12$	
	C	$9a^3 - 12a^2 + 12$	
D	$27a^3 - 12a^2 + 6$		

29	Let $f(x) = -2x^4 - 6x^3 + x + 13$ . Use synthetic substitution to find $f(-3)$		/1
	A	21	
	B	334	
	C	-308	
D	10		

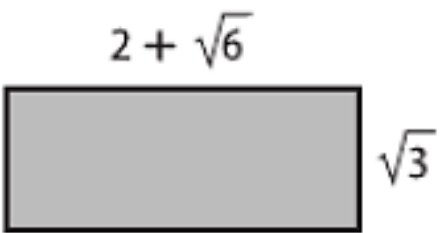
30	Given a polynomial and one of its factors. find the remaining factors of the polynomial. $2x^3 + 15x^2 + 22x - 15; x + 5$		/1
	A	$(x - 1)(x - 3)(x + 5)$	
	B	$(2x + 1)(x - 3)(x + 5)$	
	C	$(2x - 1)(x + 3)(x + 5)$	
D	$(x + 1)(x + 3)(x + 5)$		

31	Which inequality represents the graph below?		/1
	A	$y \geq \sqrt{x + 4}$	
	B	$y \geq \sqrt{x - 4}$	
	C	$y \leq \sqrt{x + 4}$	
D	$y \leq \sqrt{x - 4}$		

32	Which expression is equivalent to $216^{-\frac{1}{3}}$		/1
	A	-6	
	B	$-\frac{1}{6}$	
	C	6	
D	$\frac{1}{6}$		

33	Simplify $b^{\frac{7}{6}} \cdot b^{-\frac{1}{2}}$		/1
	A	$\sqrt[3]{b^2}$	
	B	$\sqrt[3]{b^5}$	
	C	$\sqrt{b^3}$	
D	$\sqrt[5]{b^3}$		

34	What is the area of the rectangle?		/1
	A	$2\sqrt{3} + 3\sqrt{2}$ units <sup>2</sup>	
	B	$4 + 2\sqrt{6} + 2\sqrt{3}$ units <sup>2</sup>	
	C	$2\sqrt{3} + \sqrt{6}$ units <sup>2</sup>	
D	$2\sqrt{3} + 3$ units <sup>2</sup>		



35	The solution of the following inequality is $\sqrt{y-7} + 5 \geq 10$		/1
	A	$[32, \infty)$	
	B	$[7, \infty)$	
	C	$[7, 32]$	
D	$(7, 32)$		

Solve the system of equations by graphing

$$3x + y = 4$$

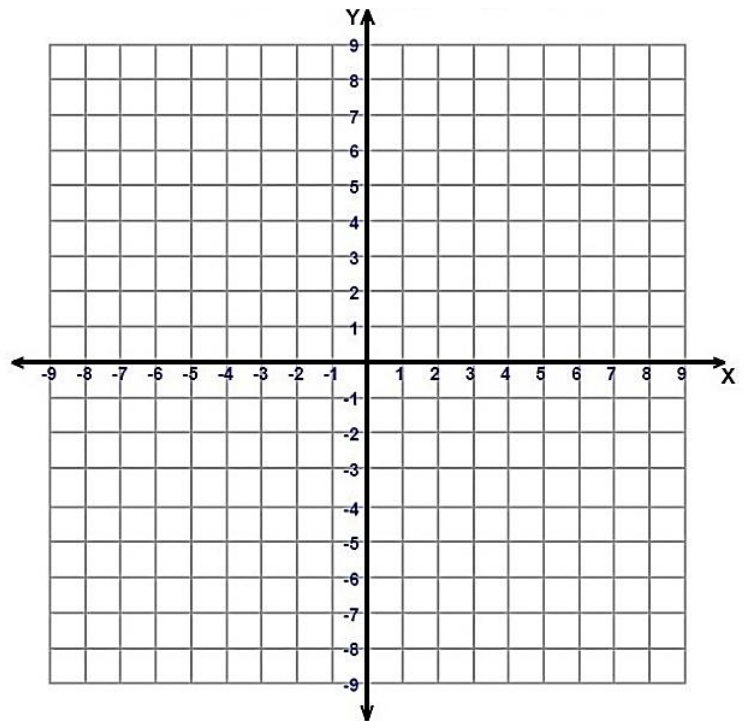
$$y = 2x - 1$$

/2

1

x			
y			

x			
y			



The solution is ( , )

Solve the system of equation by Substitution or Elimination

$$a - 3b = -22$$

$$4a + 2b = -4$$

/2

2

Graph the system of inequality. Name the coordinates of the vertices of the feasible region. Find the maximum and the minimum values of the given function.

$$5 \geq y \geq -3$$

$$4x + y \leq 5$$

$$-2x + y \leq 5$$

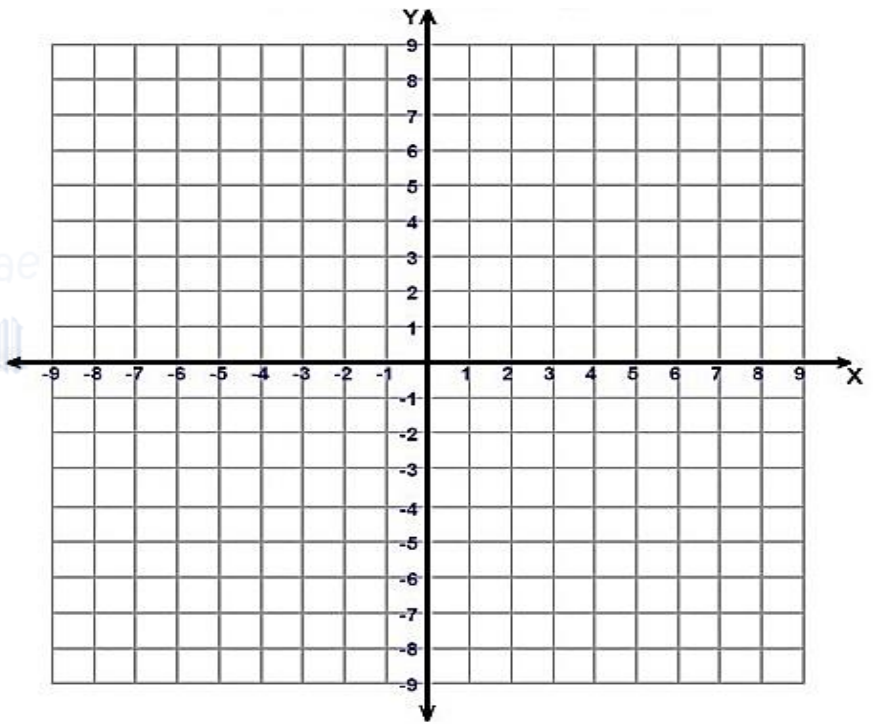
$$f(x, y) = 4x - 3y$$

/3

3

x			
y			

x			
y			



Use a matrix equation to solve the system of equations

$$2y - 4x = 3$$

$$4x - 3y = -6$$

/2

4

Find the product of the following  $\begin{bmatrix} 2 & 9 & -3 \\ 4 & -1 & 0 \end{bmatrix} \cdot \begin{bmatrix} 4 & 2 \\ -6 & 7 \\ -2 & 1 \end{bmatrix}$  /2

5

Use Cramer's Rule to solve each system of equations  
 $2x - y = -9$   
 $x + 2y = 8$  /3

6

At an office supply store, Jamal bought 3 notebooks and 5 pens for AED 13.75. If a notebook costs AED 1.25 more than a pen, how much does a notebook cost? How much does a pen cost? /2

7

Find  $2(B - A)$  if  $A = \begin{bmatrix} -3 & 5 \\ 0 & -2 \end{bmatrix}$  and  $B = \begin{bmatrix} 2 & -8 \\ -6 & -4 \end{bmatrix}$

/2

8

solve the system of equations  $\begin{bmatrix} 3 & -1 \\ 1 & 2 \end{bmatrix} \cdot \begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} 5 \\ 4 \end{bmatrix}$

/2

9

Use Cramer's Rule to solve each system of equations

$$3x - y = 0$$

$$5x + 2y = 22$$

/2

10

Solve the system of inequalities by graphing.

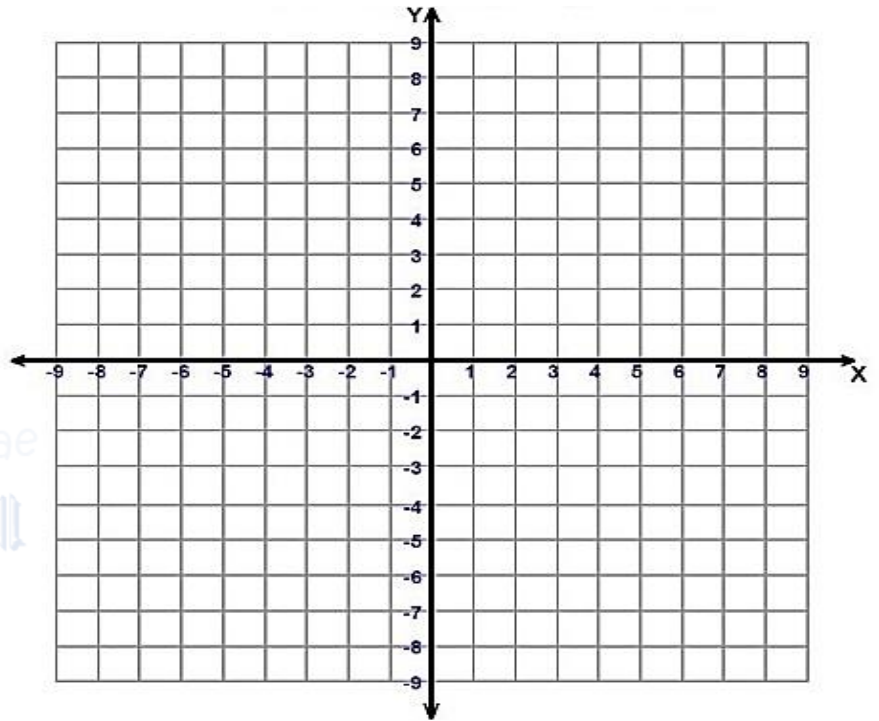
$$y \geq \frac{3}{2}x - 3$$

$$y < 4 - 2x$$

/2

11

x			
y			



x			
y			

solve the following equations by factoring

1)  $x^2 - 4x = -3$

2)  $x^2 = 144$

/2

12

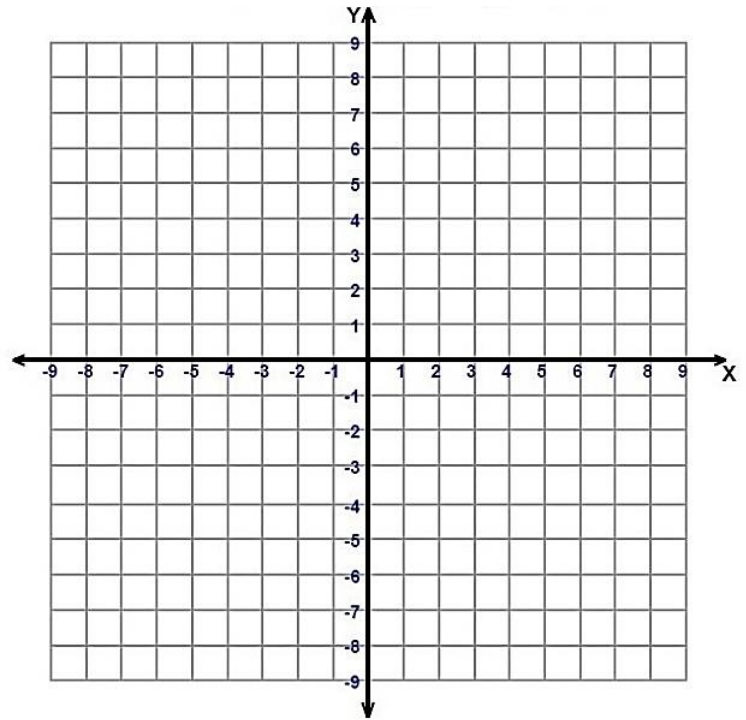


Solve  $x^2 = -x + 6$  by graphing

/2

13

x					
y					



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Find the **y-intercept**, the equation of the **axis of symmetry**, and the x-coordinate of **the vertex** for  $f(x) = 2x^2 + 8x - 3$

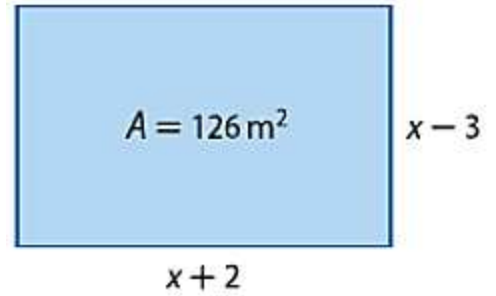
/3

14

Find  $x$  and the dimensions of the rectangle below

/2

15



Solve  $x^2 - 4x - 45 = 0$  by using the Quadratic Formula

/2

16

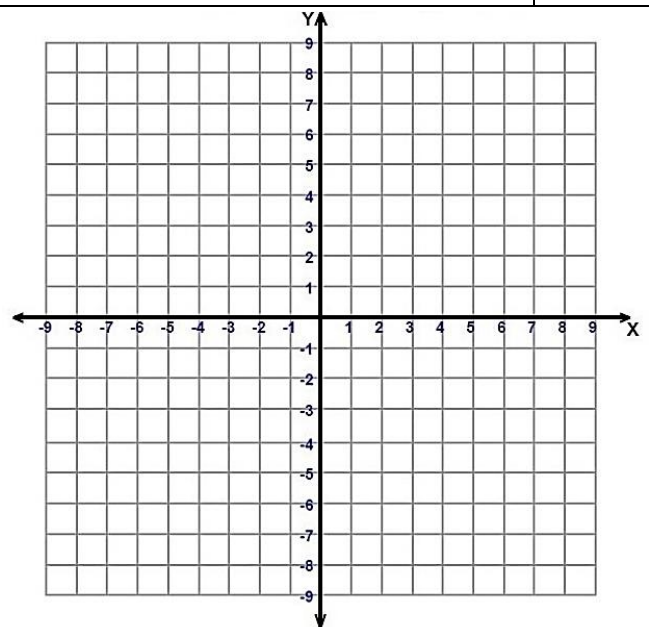


Graph  $y > x^2 + 3x + 2$

/3

17

x					
y					



Solve the following equation by any method

$$-4.8x^2 + 1.6x + 24 = 0$$

/2

18

A ball is catapulted into the air vertically with a velocity of 112 feet per second. The ball was released 6 feet above the ground. The height above the ground  $t$  seconds after release is modeled by

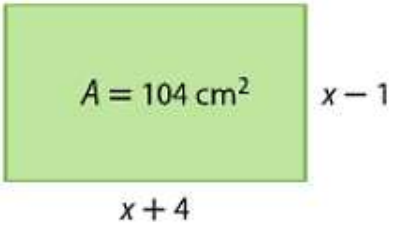
$$h(t) = -16t^2 + 112t + 6$$

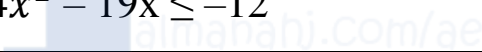

a. When will the ball reach 130 feet?

b. In how many seconds after its release will the ball hit the ground

/2

19

20	The rectangle below has an area of 104 square centimeters. Find the value of $x$ and the dimensions of the rectangle.	/2
		

21	Solve the following inequality algebraically $4x^2 - 19x \leq -12$	/2
	 	

22	For the following function find the <b>y-intercept</b> , the equation of the <b>axis of symmetry</b> , and the coordinate of the <b>vertex</b> then state the <b>maximum or minimum value</b> $f(x) = x^2 + 4x - 7$	/2

Simplify  $(4r^3 - 8r^2 - 13r + 20) \div (2r - 5)$

/2

23

Find  $3f(a - 4) - 2h(a)$  if  $f(x) = x^2 + 3x$  and  $h(x) = 2x^2 - 3x + 5$ .

/2

24

Refer to the graph

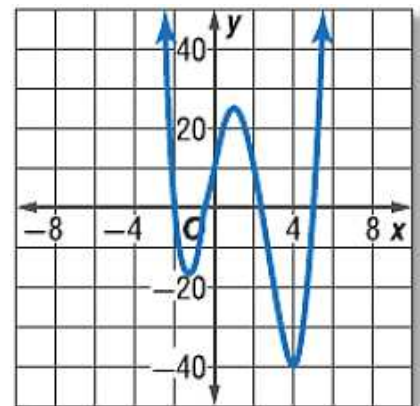
a) Estimate the x-coordinate of every turning point and determine if those coordinates are relative maxima or relative minima.

b) Estimate the x-coordinate of every zero.

c) State the domain and range of the function?

/3

25



Simplify  $(2x^3 + 11x^2 + 17x + 5)(2x + 5)^{-1}$

/2

26

Factor completely. If the polynomial is not factorable, write prime  
 $a^2x + 3ax + 2x - a^2y - 3ay - 2y$

/2

27

Solve the equation  $x^4 - 11x^2 + 28 = 0$

/2

28

Find all zeros of the function  $f(x) = x^3 - 4x^2 + x + 6$

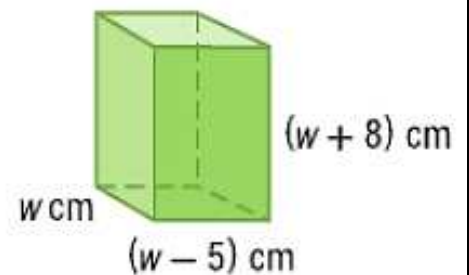
/2

29

The volume of the rectangular prism shown is 612 cubic centimeters.  
Find the dimensions of the prism.

/2

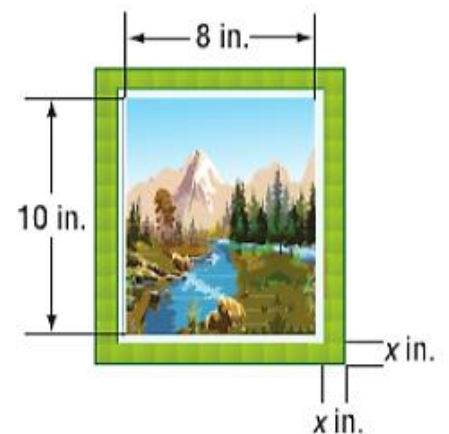
30



The area of the picture and frame shown below is 168 square inches.  
What is the width of the frame?

/2

31



Determine whether each pair of functions are inverse functions. Write yes or no. Explain your reasoning.  $f(x) = \frac{1}{3}x + 5$ ,  $g(x) = 3x - 15$

/2

32

If  $f(x) = 3x + 2$  and  $g(x) = x^2 - 2x + 1$ , find  $(f - g)(x)$ .

/2

33

Solve the equation  $\sqrt{x - 6} - \sqrt{x} = 3$

/2

34



Simplify  $\frac{m^{\frac{1}{2}} - 1}{2m^{\frac{1}{2}} + 1}$

/2

35

Solve the inequality  $-2 + \sqrt{3m - 1} < 4$

/2

36

the solution of  $1 + \sqrt{x + 11} = \sqrt{2x + 15}$

/1

37

A  $\{-7\}$

B  $\{-7,5\}$

C  $\{5\}$

D *no solution*