Revision Sheet

Student's Name	…….	Class	10 Adv	Date	/11/2019

1	What is the solution of the next system of equations? $2x - 3y = 9$ $4x + 3y = 9$		/1
	A	(0, 3)	
	B	(1, 3)	
	C	(3, -1)	
	D	(3, 0)	

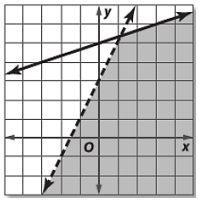
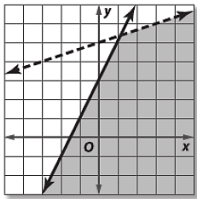
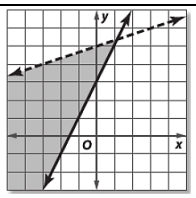
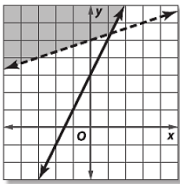
2	What is the solution of the next system of equations? $x - 2y + 3z = 1$ $4y - 4z = 12$ $8y - 14z = 0$		/1
	A	(-2, 7, 1)	
	B	(3, 7, 4)	
	C	(7, 4, 3)	
	D	(1, 8, 0)	

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

4	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.		**/1**
	A	54.5 square units	
	B	58 square units	$A = \frac{1}{2}\begin{vmatrix} -6 & 2 & 1 \\ 3 & 5 & 1 \\ 8 & -7 & 1 \end{vmatrix}$
	C	60 square units	
	D	61.5 square units	

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

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

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

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

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

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

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

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

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

14	Simplify (5 – 3i) (4 + 2i)		**/1**
	A	26 + 2i	
	B	2 – 26i	
	C	26 – 2i	
	D	2 + 26i	

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

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

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

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

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

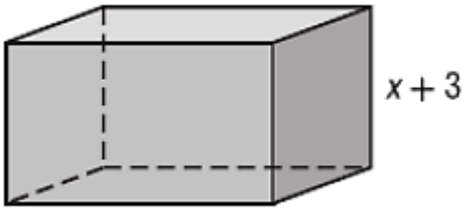
20	Which equation below has roots at – 6 and $\frac{1}{5}$		**/1**
	A	$0 = 5x^2 - 29x - 6$	
	B	$0 = 5x^2 + 31x + 6$	
	C	$0 = 5x^2 + 29x - 6$	
	D	$0 = 5x^2 - 31x + 6$	

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

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

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

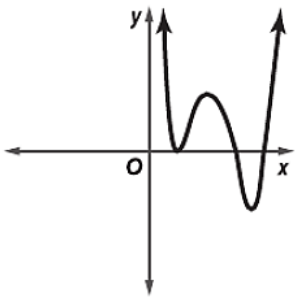
24	The volume of the rectangular prism is $6x^3 + 19x^2 + 2x - 3$. Which polynomial expression represents the area of the base?		**/1**
	A	$6x^4 + 37x^3 + 59x^2 + 3x - 9$	
	B	$6x^2 + x + 1$	
	C	$6x^2 + x - 1$	
	D	$6x + 1$	



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	$864\ b^5$	
	B	$24\ b^5$	
	C	$864\ b^6$	
	D	$288\ b^6$	

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

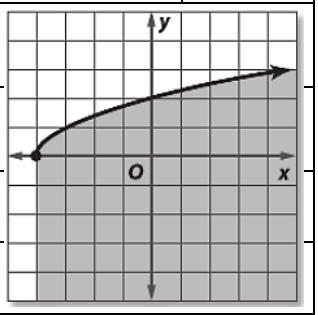


28	If h(x) = $x^3 - 2x^2 + 6$, what is the value of 2h(3a)?		**/1**
	A	$27\,a^3 - 18\,a^2 + 6$	
	B	$54\,a^3 - 36\,a^2 + 12$	
	C	$9\,a^3 - 12\,a^2 + 12$	
	D	$27\,a^3 - 12\,a^2 + 6$	

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)	

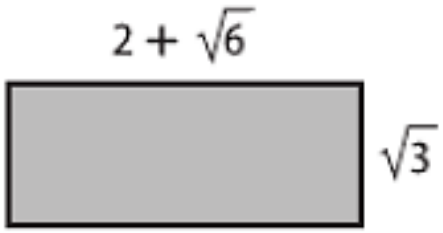
31	Which inequality represents the graph below?		**/1**
	A	$y \geq \sqrt{x+4}$	
	B	$y \geq \sqrt{x-4}$	
	C	$y \leq \sqrt{x+4}$	
	D	$y \leq \sqrt{x-4}$	



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^2	
	B	$4 + 2\sqrt{6} + 2\sqrt{3}$ units^2	
	C	$2\sqrt{3} + \sqrt{6}$ units^2	
	D	$2\sqrt{3} + 3$ units^2	



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	$(7, 32)$	

1

Solve the system of equations by graphing

$3x + y = 4$

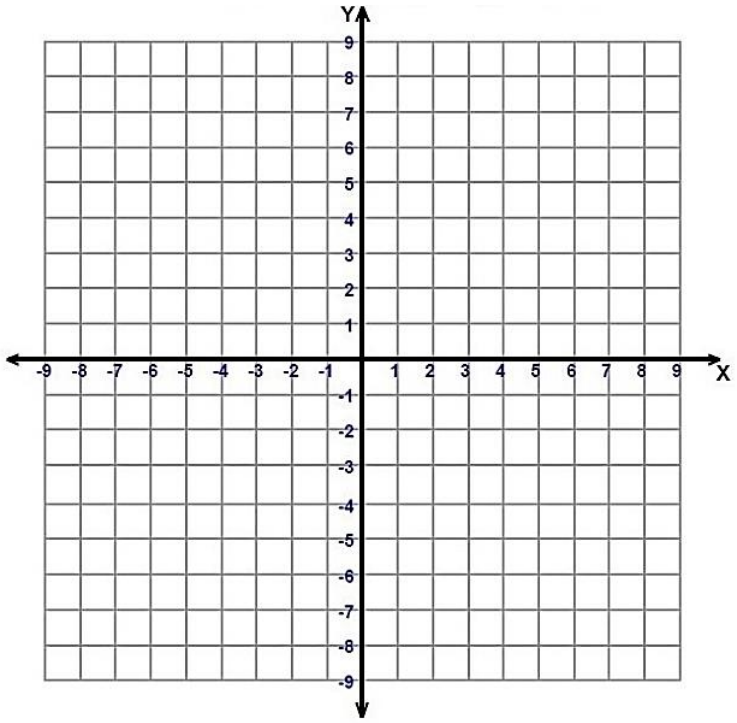
$y = 2x - 1$

/2

x			
y			

x			
y			

The solution is (,)



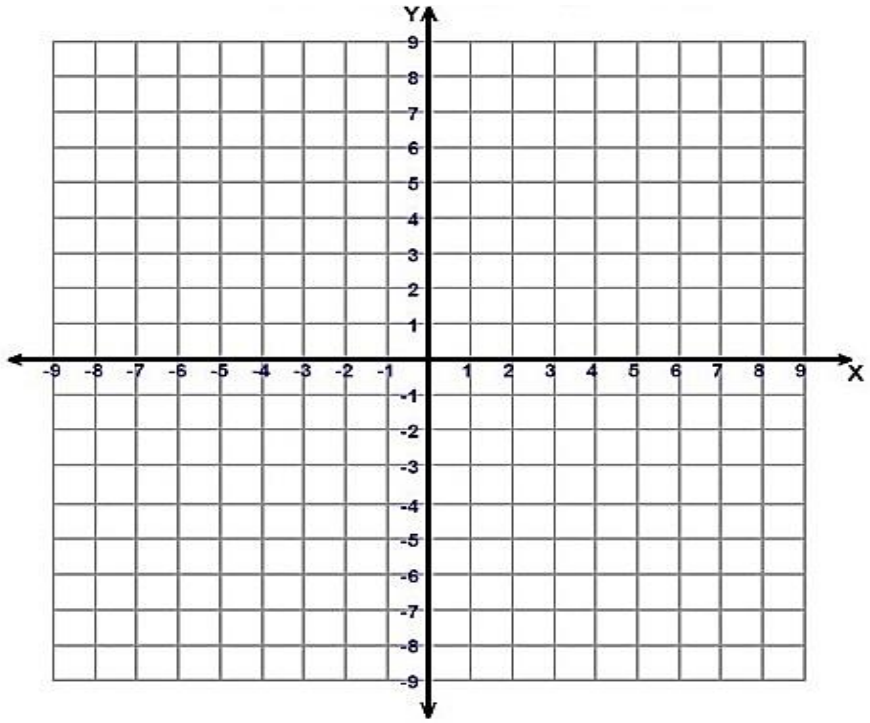
2

Solve the system of equation by Substitution or Elimination

$a - 3b = -22$

$4a + 2b = -4$

/2

3	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**
	<table><tr><td>x</td><td></td><td></td><td></td></tr><tr><td>y</td><td></td><td></td><td></td></tr></table> <table><tr><td>x</td><td></td><td></td><td></td></tr><tr><td>y</td><td></td><td></td><td></td></tr></table> 	
4	Use a matrix equation to solve the system of equations $2y - 4x = 3$ $4x - 3y = -6$	**/2**

5	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**

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

7	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**

8	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**
9	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**
10	Use Cramer's Rule to solve each system of equations $3x - y = 0$ $5x + 2y = 22$	/2

11

Solve the system of inequalities by graphing.

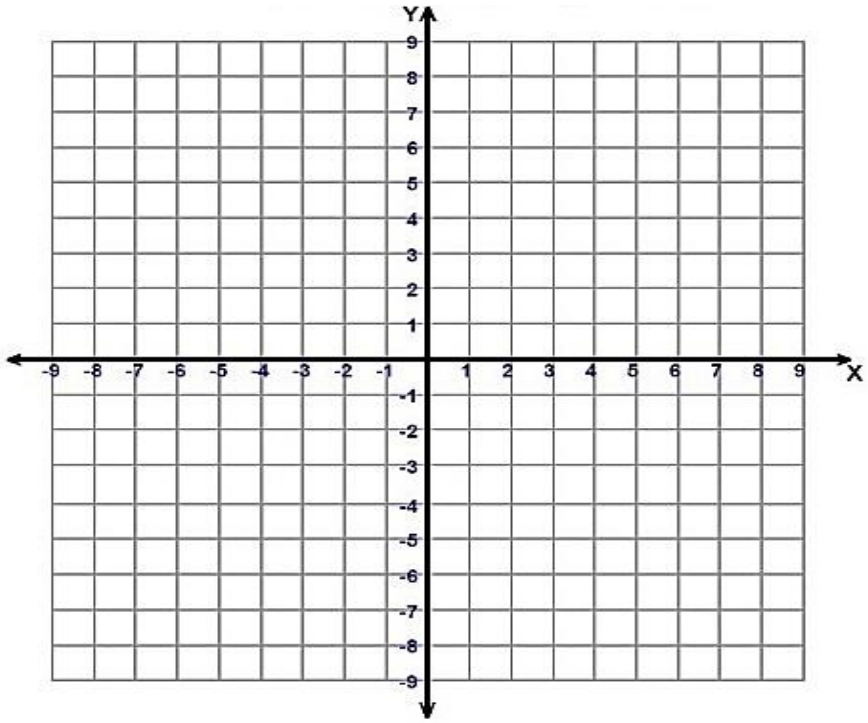
$y \geq \frac{3}{2}x - 3$

$y < 4 - 2x$

/2

x			
y			

x			
y			



12

solve the following equations by factoring

1) x^2 - 4x = -3

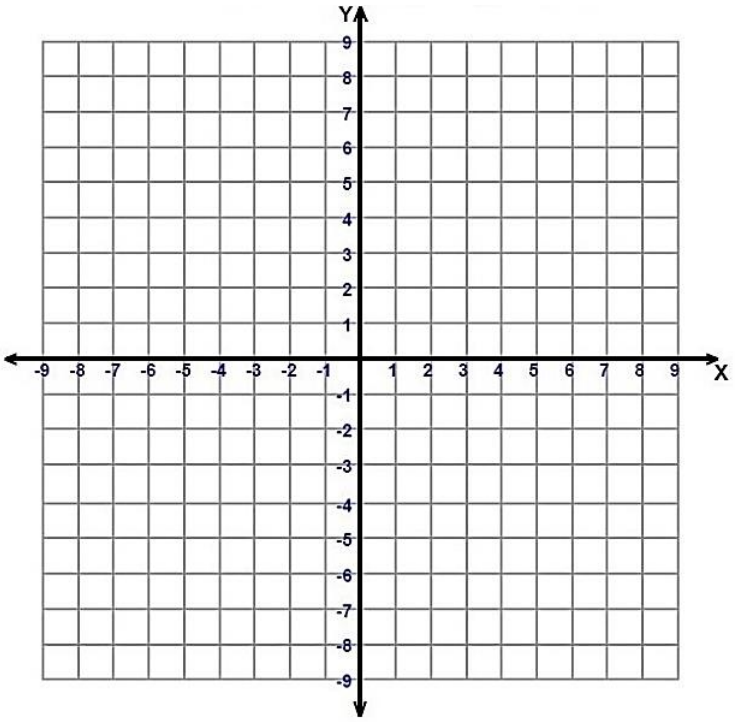
2) x^2 = 144

/2

13

Solve x^2 = - x + 6 by graphing **/2**

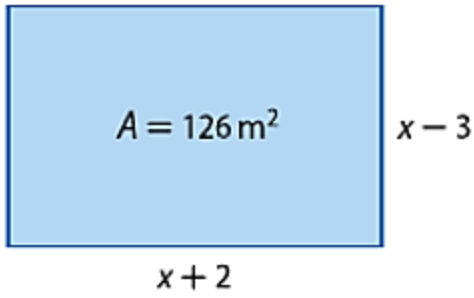
x					
y					



14

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**

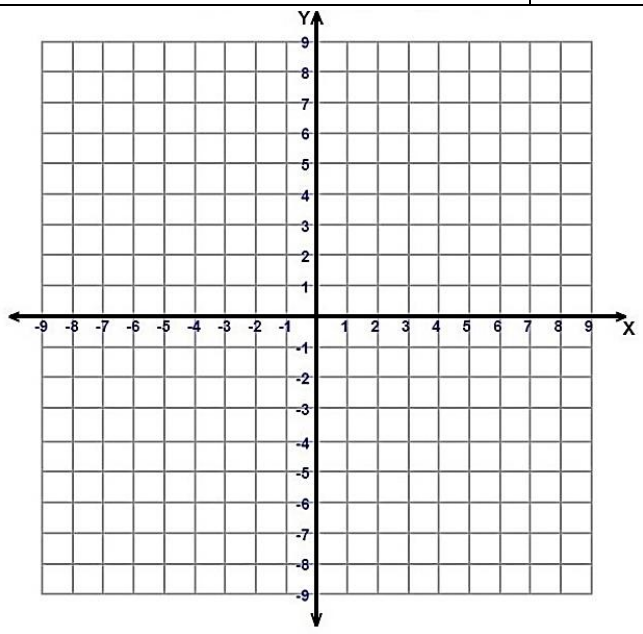
15	Find x and the dimensions of the rectangle below	**/2**



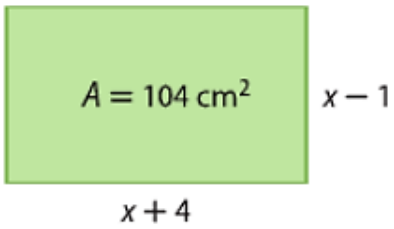
16	Solve x^2 - 4x - 45 = 0 by using the Quadratic Formula	**/2**

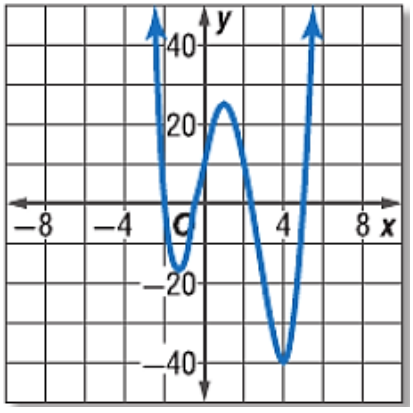
17	Graph y > x^2 + 3x + 2	**/3**

x					
y					



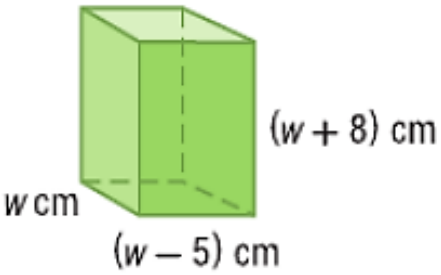
18	Solve the following equation by any method $-4.8x^2 + 1.6x + 24 = 0$	**/2**
19	A ball is catapulted into the air vertically with a velocity of 112 feet per second. The ball was released 6 feet above the ground. The height above the ground t seconds after release is modeled by $h(t) = -16t^2 + 112t + 6$ a. When will the ball reach 130 feet? b. In how many seconds after its release will the ball hit the ground	**/2**

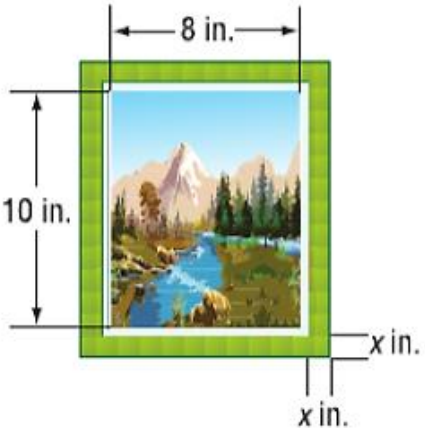
20	The rectangle below has an area of 104 square centimeters. Find the value of x and the dimensions of the rectangle.	**/2**
		
21	Solve the following inequality algebraically $4x^2 - 19x \leq -12$	/2
22	For the following function find the **y-intercept**, the equation of the **axis of symmetry**, and the coordinate of the **vertex** then state the **maximum or minimum value** $f(x) = x^2 + 4x - 7$	/2

23	Simplify $(4r^3 - 8r^2 - 13r + 20) \div (2r - 5)$	**/2**
24	Find $3f(a - 4) - 2h(a)$ if $f(x) = x^2 + 3x$ and $h(x) = 2x^2 - 3x + 5$.	**/2**
25	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**
		

26	Simplify $(2x^3 + 11x^2 + 17x + 5)(2x + 5)^{-1}$	**/2**
27	Factor completely. If the polynomial is not factorable, write prime $a^2x + 3ax + 2x - a^2y - 3ay - 2y$	**/2**
28	Solve the equation $x^4 - 11x^2 + 28 = 0$	**/2**

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

30	The volume of the rectangular prism shown is 612 cubic centimeters. Find the dimensions of the prism.	/2
		

31	The area of the picture and frame shown below is 168 square inches. What is the width of the frame?	/2
		

32	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**

33	If f(x) = 3x + 2 and g(x) = x^2 – 2x + 1, find (f – g)(x).	**/2**

34	Solve the equation $\sqrt{x-6} - \sqrt{x} = 3$	**/2**

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

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

37	the solution of $1+\sqrt{x+11}=\sqrt{2x+15}$		**/1**
	A	$\{-7\}$	
	B	$\{-7,5\}$	
	C	$\{5\}$	
	D	*no solution*	