

Math 1302 College Algebra

Name _____

UTA ID: _____

Section _____

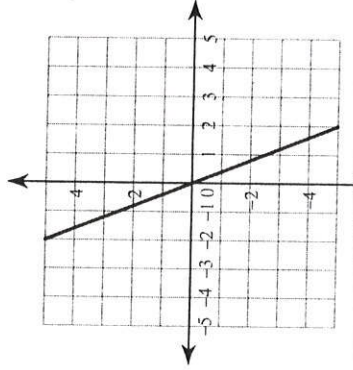
Perform the indicated operation.

- 1) $h(x) = x + 5$
 $g(x) = 3x - 2$
 Find $(h + 3g)(x)$

- 2) $h(n) = 2n - 5$
 $g(n) = n^2 + 2$
 Find $(h \circ g)(n)$

Write the slope-intercept form of the equation of the line.

3)



Simplify.

4) $(7 + 4i)(8 + 3i)$

Use the information provided to write the vertex form equation of the parabola.

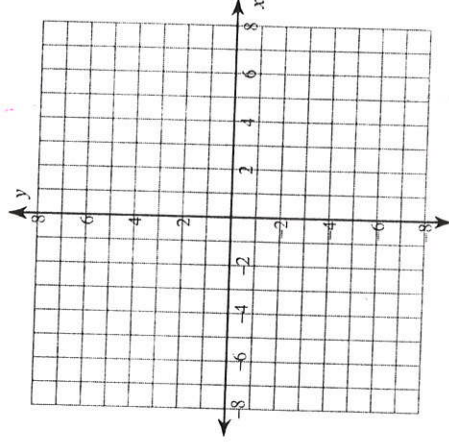
- 5) Vertex: $(7, -5)$, Focus: $(7, \frac{23}{4})$
up opens upward

Identify the vertex and axis of symmetry and sketch the graph.

Find the discriminant and state the number and type of solutions.

7) $4n^2 + 8n - 5 = -9$

6) $y = x^2 - 4$



Factor completely.

10) $n^2 + 4n - 45$

Simplify.

11) $\frac{x}{2} - 2$

Solve the following equation.

12) $2(x+5) = 7(x-3)$

13) $(6 - 2i) + (3i)$

Evaluate the function.

14) $f(n) = 3n - 4$; Find $f(-9)$

Solve the equation with the quadratic formula.

15) $x^2 + x - 20 = 0$

- 16) The average price of a movie ticket is given by the function $P(x) = 0.227x - 448.71$. Find the average price of a movie ticket in 2011.

- 17) Determine whether the pair of lines is parallel, perpendicular or neither.

$$x - 2y = 3 \qquad 2x + y = 1.$$

- 18) Determine whether the pair of lines is parallel, perpendicular or neither.

$$3y = 6x - 5 \qquad 2y = 8 - 4x$$

- 19) Determine whether the given equation is symmetric with respect to the x-axis, the y-axis, the origin, or none.

$$y = |x + 2|$$

20) Find the domain of $f(x) = \sqrt{x+5}$

21) Find the slope of the line through $(1, 5)$ and $(-4, 3)$.

22) Write an equation of the line with slope 2 and y intercept $(0,5)$.

23) A pool company is designing a rectangular pool. If the perimeter of the pool is 140 feet, and the length of the pool is x , express the area of the pool as a function of the length.

24) Solve for r .

$$T = 6pr + rd$$

25) A farmer wants to enclose a rectangular area, using the side of his barn as one side of the rectangle. What is the maximum area that he can enclose with 100 ft of fence? What should the dimensions of the area be in order to give this area?

Answers to Math 1302 College Algebra (ID: 1)

1) $10x - 1$

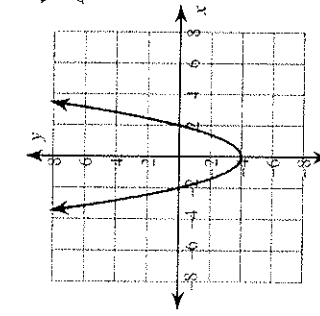
2) $2n^2 - 1$

4) $44 + 53i$

3) $y = -\frac{5}{2}x$

5) $y = -\frac{1}{3}(x-7)^2 - 5$

6)



Vertex: $(0, -4)$
Axis of Sym.: $x = 0$

7) 0; one real solution

8) $\{12, 2\}$

9) $\left\{ \frac{2i\sqrt{3}}{3}, -\frac{2i\sqrt{3}}{3} \right\}$

10) $(n+9)(n-5)$

11) $\{4, -4\}$

12) $-i$

13) $6 + i$

14) -31

15) $\{4, -5\}$

16) \$7.79

18) Neither

19) No symmetry

20) All reals greater than or equal to -5

21) $2/5$

22) $y=2x+5$

23) $A=x(70-x)$

24) $r=T/(6p+d)$

25) Area= 1250 sq ft; $l=50$ ft, $w=25$ ft