

Part 1. Computational Math. Show all work for credit. 2 points each.

1) a) $\frac{\frac{-14}{3}}{\frac{7}{3}} =$

f) $-|-3+5| =$

b) $16 \div 2^3 - 2 \cdot 6 =$

g) $\frac{21}{2} \times \frac{3}{4} =$

c) $-3^2 =$

h) $4^{\frac{6}{3}} =$

d) $\frac{3}{4} + \frac{1}{3} - \frac{7}{2} =$

i) $12.91 + 1.01 =$

e) $\frac{-1}{4} \div \left(-\frac{12}{5}\right) =$

j) $21 \cdot 0 + (514) =$

ANSWERS
HERE

a) _____

b) _____

c) _____

d) _____

e) _____

f) _____

g) _____

h) _____

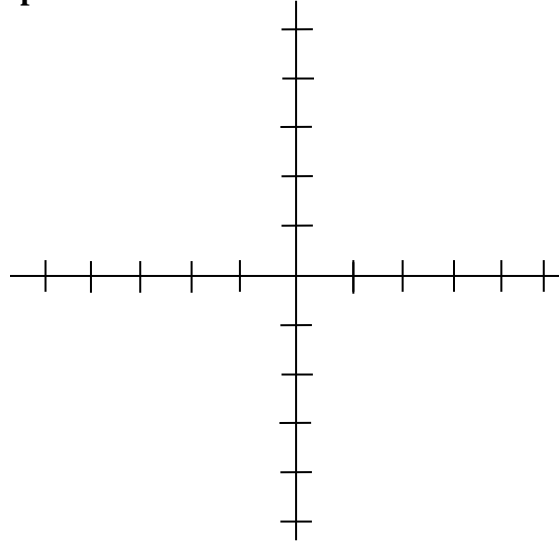
i) _____

j) _____

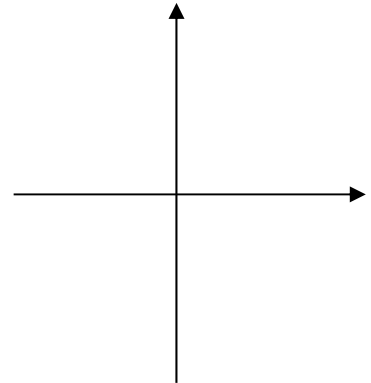
Part 2. Show all work for possible partial credit. 5 points each.

2. Graph the given line. **Label all intercepts.**

$$5x - 2y = 3$$



3. Graph the line that has a y-intercept of $(0, -2)$ and a slope of $-\frac{2}{3}$.
Label at least 2 points.



4. Find the slope of the line through the points $(1, 2)$ and $(-3, 5)$.

5. Find the product and simplify: $(\sqrt{x} - y)(\sqrt{x} + y)$

6. Simplify the expression: $\frac{1}{3} - \frac{2}{4x} + \left(\frac{3}{2x}\right)$

7. Simplify using **only positive exponents**. Assume all variables represent positive real numbers.


$$\frac{3x^5 \cdot 2^{-3}}{(x^{-3})^3}$$

8. Express and simplify in lowest terms: $\frac{x^2 - 9}{x^2 + x - 6}$

9. Solve the equation for x . $3x = 3(2 + 4x) + 6$

10. Solve the inequality. Give the solution set in both interval and graph forms.

$$-\frac{1}{5}x < 7$$

Graph solution: 

Interval notation:

11. Solve: $x^2 - 0x - 9 = 0$

12. Given $A = \frac{1}{2}h(b_1 + b_2)$, solve for b_1 .

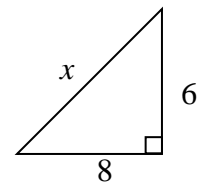
Factor completely, write “prime” if it cannot factor:

13. $3y^2 - 18y - 21$

14. $2x^3 - 8x$

15. $2a^2 + a - 6$

16. For the given right triangle, find x . You must set up and solve an equation for credit.



Part 3. Show all work for possible partial credit. 7 points each

17. Find the equation of the line passing through $(2, -1)$ with slope -5 .

The point slope form is $\Rightarrow (y - \underline{\quad}) = \underline{\quad}(x - \underline{\quad})$.

The slope intercept form is $\Rightarrow y = \underline{\quad}x + \underline{\quad}$.

18. Multiply and **simplify**: $\frac{4x-20}{10x} \cdot \frac{5x^4}{20-4x}$

19. Solve for x . $\frac{2x+5}{4} + \frac{x+4}{8} = 2$

20. Choose a domain for each function. Write the correct number in the answer blank.

a) $f(x) = \frac{12}{x-3}$ Answer _____

b) $g(x) = \frac{x^2-9}{3}$ Answer _____

c) $h(x) = \sqrt{x-3}$ Answer _____

- 1) $(-\infty, \infty)$
- 2) $(0, \infty)$
- 3) $(9, \infty)$
- 4) $[3, \infty)$
- 5) $(-\infty, 3) \cup (3, \infty)$
- 6) Not listed.

21. For the following pair of functions, find the following. Be sure to express in simplest form.

$$f(x) = 4x - 3 \text{ and } g(x) = -2x^2 + 2x + 6$$

(a) $(f + g)(4) =$

(b) $(f - g)(x) =$

22. Perform the indicated operation. **Reduce** to lowest terms.

$$\frac{2}{x-3} - \frac{5}{x^2-3x}$$

23. Express the radical in simplified form. Assume that all variables represent positive real numbers.

a) $\sqrt{\frac{16a^6}{36a^{10}}}$

b) $2\sqrt{24} + \sqrt{25} - 3\sqrt{54}$

24. Solve for p algebraically. $\sqrt{3p-5} = p-3$

25. Given $f(x) = x^2 - 3x - 12$, evaluate

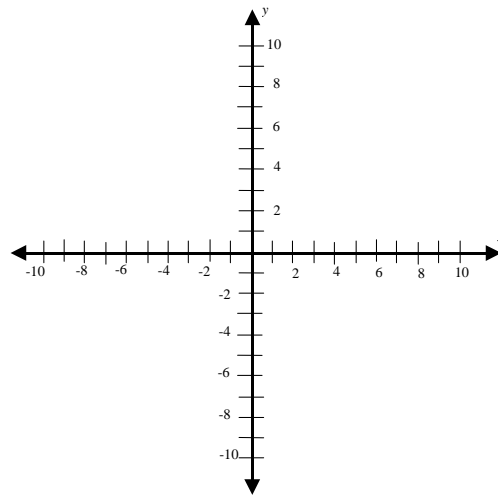
a) $f(0)$

b) $f(-3b)$

26. Graph the function by creating a table of ordered pairs:

$$f(x) = \sqrt{x+2}$$

x	y



27. Complete the following table.

Inequality(set)	Interval
a) $x \leq 3$	_____
b) _____	$(-\infty, -3)$
c) $-4 < x \leq -1$	_____
d) $x \neq 3$	_____

28. Solve for x . $x^3 - 5x^2 - 4x + 20 = 0$

Part 4. Choose 3 of the following 5 problems. You must indicate the 3 problems to be graded. If not, we will grade the first three. Show all work for possible partial credit. 7 points each.

29. Solve for x and simplify answers. $3x^2 - 5x = 6$

Grade

30. Factor completely: $4 - x^4$.

Grade

31. A ball is projected upward from the ground. The distance in feet from the ground is given by:

Grade

$$s(t) = -16t^2 + 128t$$

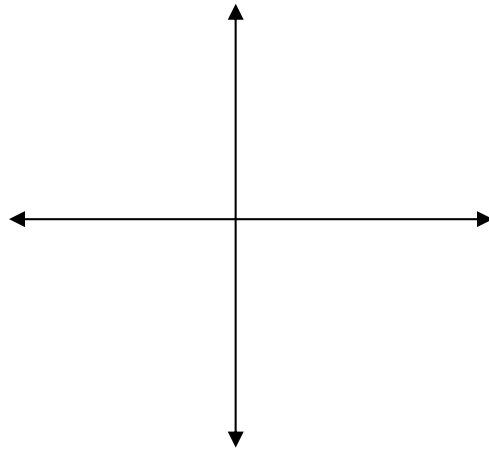
At what time(s) will the ball be 64 feet off the ground?

32. Jennifer made \$8000 last year mowing lawns. She invested part of her money into an account that pays 2% simple interest, and the rest into an account that pays 4%. How much did she put into each account if she earned \$300 in interest after one year?

Grade

33. Graph the function $f(x) = -\frac{3}{x}$. Label at least 5 pts.

Grade



BE SURE YOU HAVE MARKED THE 3 PROBLEMS TO BE GRADED.