

Part 1: Compute the following. Show all work for credit. 1 point each.

1) $\left(\frac{2}{3}\right)^{-2}$

6) $\frac{12}{0} =$

2) $\frac{-5}{4} \div \left(-\frac{25}{2}\right) =$

7) $\frac{65}{2} \times \frac{4}{15} =$

3) $|-10-5| =$

8) $-(-2)-8+6 =$

4) $\frac{3}{4} + \frac{2}{3} + \frac{5}{2} =$

9) $11.9 + 1.11 =$

5) $110 \div 5 =$

10) $5 \cdot 3 - 3 \cdot 6 + 3 =$

Put answers
here:

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

7) _____

8) _____

9) _____

10) _____

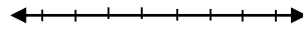
Part II. Show all work for possible partial credit. 5 points each.

11. Solve the equation for x . $5x + 4(3 - 5x) = 7$

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

$$\frac{4x - 2}{5} \leq -2$$

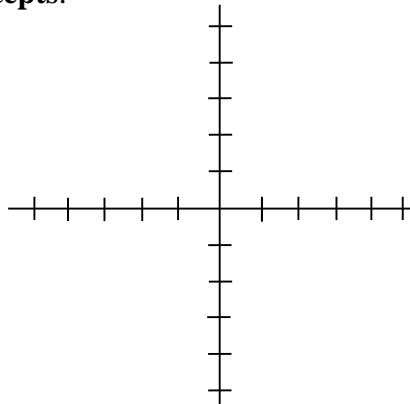
Graph
solution



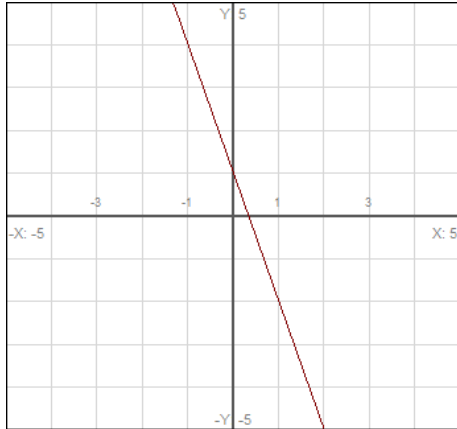
Interval notation

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

$$-4x + 3y = 8$$



14. Find the slope of the indicated line.



15. Simplify the expression: $\frac{4 \pm \sqrt{20}}{4}$

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

$$\frac{3x^{-4}}{(4x)^2}$$

Factor **completely**. Indicate if expression cannot be factored:

17. $2x^4 - 50x^2$

18. $2a^2 - 5a - 3$

19. Given $f(x) = x^2 - 3x + 2$, evaluate

a) $f(-2)$

b) $f(3a)$

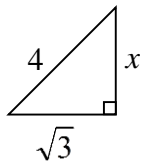
20. Express in simplest form: $\frac{x^2 - 9}{x^2 - 5x + 6}$

21. Perform the indicated operation. $x(3x - 3) - (x + 1)(x + 2)$

22. Find the indicated product: $2(5x - 3)^2$

23. Given $F = \frac{9}{5}(C + 32)$, solve for C .

24. For the given right triangle, find x .



Part III. Show all work for possible partial credit.

8 points each

25. Solve for x . $\frac{3x+2}{3} + \frac{x+4}{2} = -3$

26. Choose a domain for each function. Put the appropriate letter in the answer blank.

1) $f(x) = \frac{4}{x-2}$ Answer _____

2) $g(x) = \sqrt{x} - 2$ Answer _____

3) $h(x) = \sqrt{x-2}$ Answer _____

4) $m(x) = x^2 + 3x - 4$ Answer _____

A) $(-\infty, \infty)$

B) $[0, \infty)$

C) $[4, \infty)$

D) $[2, \infty)$

E) $(-\infty, 2) \cup (2, \infty)$

F) Not listed.

27. Find the equation of the line passing through $(2, -3)$ with slope -2 . Write your final answer in $y=$ form.

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

$$f(x) = 3x - 4 \text{ and } g(x) = -2x^2 + x + 5$$

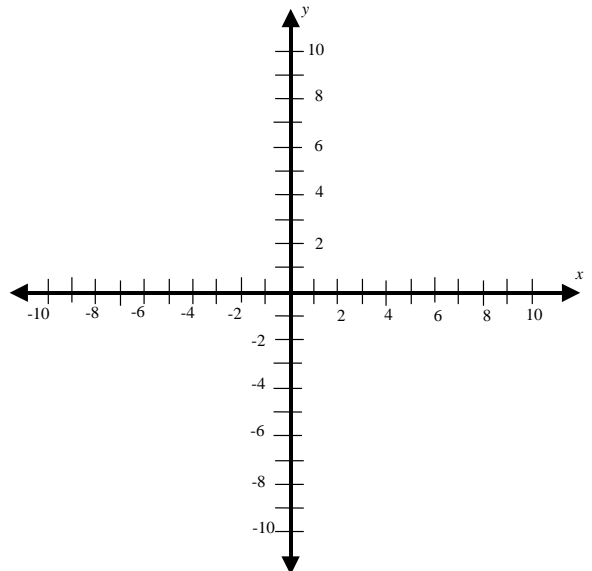
(a) $(f + g)(x) =$

(b) $(f - g)(3) =$

29. Graph the function by creating a table of ordered pairs.
Label all intercepts.

$$f(x) = \sqrt{x} - 3$$

x	y
-1	
0	
1	
4	
9	



30. Perform the indicated operation. Simplify.

$$\frac{1}{x} + \frac{4}{x+3} - \frac{5}{x^2+3x}$$

31. Perform indicated operation. Simplify. $\frac{1-x^2}{4} \div \frac{5x-5}{6}$

32. Complete the following table.

Inequality	Interval
a) $x \leq -3$	_____
b) _____	$[4, \infty)$
c) $x \neq 0$	_____
d) $-5 < x \leq -2$	_____

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

a) $\sqrt{100x^3y^{10}}$

b) $\sqrt{50} - 2\sqrt{18}$

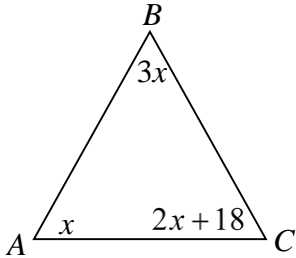
34. Solve using any method you wish. $(x-2)^2 = 7$

35. Solve for x . $x^3 - 2x^2 = 8x$

36. Solve for b . *Check.* $\sqrt{5b+64} = b+8$

Part IV. Choose 3 of the following 4 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. 8 points each.

37. Using algebra, find the measure of each angle in the triangle shown below.
Grade



$\angle A$ _____

$\angle B$ _____

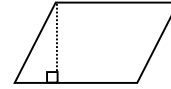
$\angle C$ _____

38. Solve for x . $\frac{1}{x} + \frac{1}{x-1} = \frac{7}{12}$
Grade

39. The base of a parallelogram is 9 feet more than the height. If the area of the parallelogram is 70 ft.², what are the measures of the base and height?

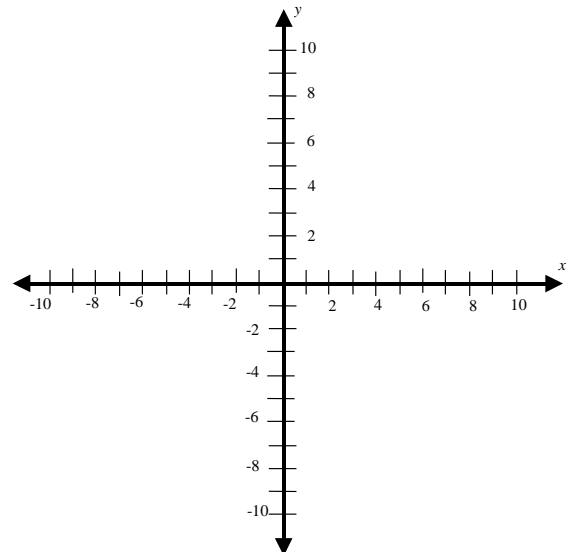
Grade

$$\text{area of parallelogram} = \text{base} \times \text{height}$$



40. Graph the function $f(x) = x^2 - 4$. Label all intercepts.

Grade



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