

Corrective Assignment

Find the x-intercept(s) and y-intercept if they exist.

1.

$$f(x) = \frac{2x^2 - 50}{x^2 + 14x + 48}$$

x-intercept(s):

y-intercept:

2.

$$f(x) = \frac{2x + 5}{x^2}$$

x-intercept(s):

y-intercept:

3.

$$f(x) = \frac{x^2 - 4x - 32}{x + 4}$$

x-intercept(s):

y-intercept:

Find the horizontal asymptote and vertical asymptote(s) if they exist.

4.

$$f(x) = \frac{5x^2 - 10}{x^2 + 10x + 16}$$

VA:

HA:

5.

$$f(x) = \frac{4 + 3x}{x^2 - 8x}$$

VA:

HA:

6.

$$f(x) = \frac{x^2 - x - 30}{2x + 7}$$

VA:

HA:

Given the graph of a rational function, find the asymptotes and intercepts if they exist.

7.

VA:

HA:

x-int:

y-int:

8.

VA:

HA:

x-int:

y-int:

9.

VA:

HA:

x-int:

y-int:

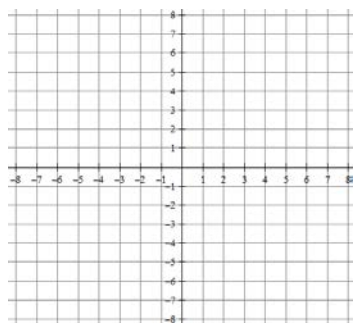
Find all asymptotes and intercepts. Mark them on the graph. Use the graphing calculator to sketch the function.

10.

VA:

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

HA:



x-int:

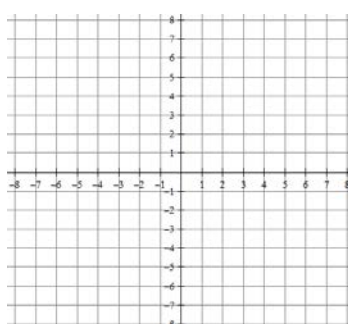
y-int:

11.

VA:

$$f(x) = \frac{x^2-9x+20}{x^2-4x+3}$$

HA:



x-int:

y-int:

Simplify. State the excluded values when asked.

12. $\frac{k^2-9}{4k^2+12k}$

Excluded values:

13. $\frac{n^2+4n-21}{n^2-8n+15}$

Excluded values:

14. $\frac{18x^2}{5y^3} \cdot \frac{20y}{3x^3}$

15. $\frac{m-5}{2m-8} \cdot \frac{4m^2-64}{m^2-25}$

16. $\frac{k^2+12k+32}{k^2+13k+40} \div \frac{k^2+6k+8}{k^2+5k}$

17. $\frac{p^2-9}{p-7} \div p^2 - 10p - 39$

18. $\frac{\frac{x}{7}}{\frac{2}{x+4}}$

19. $\frac{\frac{1-x}{x-5}}{\frac{16}{x^2}}$

20.

$$\frac{3}{y^2 - 3y + 2} + \frac{7}{y^2 - 1} =$$

21.

$$\frac{2x-2}{x^2-16} - \frac{x+5}{x^2-16} =$$

22.

$$\frac{2}{r} + \frac{6}{r-7} =$$

23.

$$\frac{4}{3n-3} - \frac{4}{3n} =$$

Solve each equation. Check for extraneous solutions.

24.

$$\frac{4-3x}{x-2} = -5$$

25.

$$10 = \frac{7x+3}{2x-1}$$

26.

$$1 + \frac{1}{x} = \frac{72}{x^2}$$

27.

$$\frac{18}{n-2} = 1 + \frac{20}{n+2}$$

28.

$$\frac{3}{x-2} + \frac{7}{x} = \frac{6}{x^2 - 2x}$$

29.

$$\frac{y}{2y+2} = \frac{2y-3}{y+1} - \frac{2y}{4y+4}$$

APPLICATION

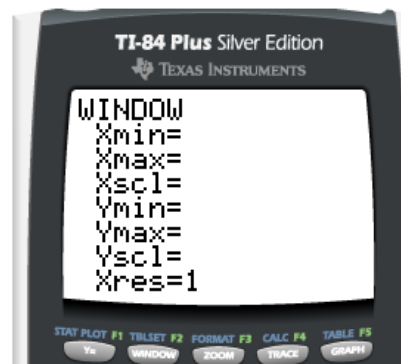
1. The number f of flies eaten by a praying mantis in 8 hours can be modeled by the following equation where d is the density of flies available (flies per cubic centimeter).

$$f(d) = \frac{26.6d}{0.4d + 1.1}$$

- a. Graph on your calculator with a friendly window. Fill in in the window.

- b. Find $f(4)$. What does it mean?

- c. What does $f(d) = 45$ mean?



- d. What is the excluded value?

2. Mr. Bean's Tugboat goes upstream and comes back downstream at a consistent rate. Use the equation where d is distance travelled one way (in miles), c is speed of the current, s is speed of the tugboat (mph), and t is time (in hours).

$$\frac{d}{s - c} + \frac{d}{s + c} = t$$

- a. Simplify the left side of the equation.

- b. If the tugboat 40 miles upstream and back at constant speed of 12 miles per hour in 20 hours, what is the speed of the current?

SAT

MULTIPLE CHOICE

Which expression is equal to $\frac{4p-4}{p} \div \frac{9p-9}{4p^2}$?

- (A) $\frac{36p^2+72p+36}{4p^3}$
 (B) $\frac{9}{16p}$
 (C) $\frac{16p^3-16p^2}{9p^2-9p}$
 (D) $\frac{16p}{9}$
 (E) None of the above

GRID IN

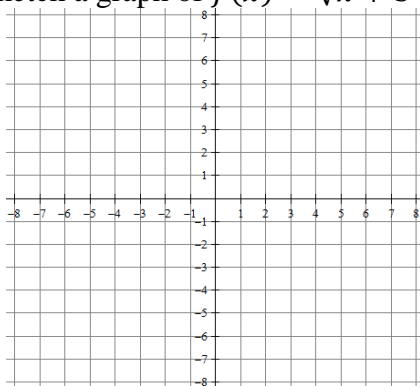
Find the value of k so that $\frac{\frac{5}{3}}{\frac{k}{2}} = \frac{30}{9}$

	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Algebra Skillz

GRAPH

1. Sketch a graph of $f(x) = \sqrt{x+3} - 5$



SIMPLIFY

2. $\sqrt{2}(2 + 4\sqrt{5})$

3. $(5 + \sqrt{7})(3 - \sqrt{2})$

SOLVE

4. Factor: $3x^2 - 27$

5. Solve by factoring.
 $x^2 - 12x + 36 = 0$

UNIT 10 CORRECTIVE ASSIGNMENT ANSWERS

1. x-int: (-5,0)(5,0) y-int: $(0, -\frac{25}{24})$	2. x-int: $(-\frac{5}{2}, 0)$ y-int: none	3. x-int: (-4,0)(8,0) y-int: (0, -8)	4. VA: $x = -2$ $x = -8$ HA: $y = 5$	5. VA: $x = 0$ $x = 8$ HA: $y = 0$	6. VA: $x = -\frac{7}{2}$ HA: none
7. VA: $x = 4$ HA: $y = 1$	x-int: (3,0) y-int: $(0, \frac{1}{2})$	8. VA: $x = -3$ HA: none	x-int: (-2,0), (4,0) y-int: $(0, -\frac{1}{2})$	9. VA: $x = 0, x = 2$ HA: $y = -2$	x-int: none y-int: none
10. VA: $x = 0, 3$ x-int: (4,0) HA: $y = 0$ y-int: none		11. VA: $x = 1, 3$ x-int: (4,0), (5,0) HA: $y = 1$ y-int: $(0, \frac{20}{3})$		12. $\frac{k-3}{4k}$ excluded value: $k \neq -3, 0$	
13. $\frac{n+7}{n-5} \quad n \neq 3, 5$	14. $\frac{24}{xy^2}$	15. $\frac{2(m+4)}{m+5}$	16. $\frac{k}{k+2}$	17. $\frac{p-3}{(p-7)(p-13)}$	18. $\frac{x^2+4x}{14}$
19. $\frac{5x-x^3}{80}$	20. $\frac{10y-11}{(y-2)(y+1)(y-1)}$	21. $\frac{x-7}{x^2-16}$	22. $\frac{8r-14}{r(r-7)}$	23. $\frac{4}{3n(n-1)}$	24. $x = 3$
25. $x = 1$	26. $x = 9$ $x = -8$	27. $n = -10$ $n = 8$	28. $x = 2$ 2 is extraneous NO SOLUTION	29. $y = 3$	
1. APPLICATION a. xmin = 0 xmax = 8 xscl = 1 ymin = 0 ymax = 80 yscl = 10 b. $f(4) = 39.4$ At 4 flies per cm^3 available mantis eat 39.4 flies c. At what density available would mantis eat 45 flies d. $d \neq -2.75$		2. a. $\frac{2ds}{s^2-c^2} = t$ b. $\sqrt{96} \approx 9.8$ mph		3. SAT Multiple Choice (D) Grid In $k = 1$	
Algebra Skillz 1.		2. $2\sqrt{2} + 4\sqrt{10}$ 3. $15 - 5\sqrt{2} + 3\sqrt{7} - \sqrt{14}$		4. $2(x+3)(x-3)$ 5. $x = 4, x = 8$	