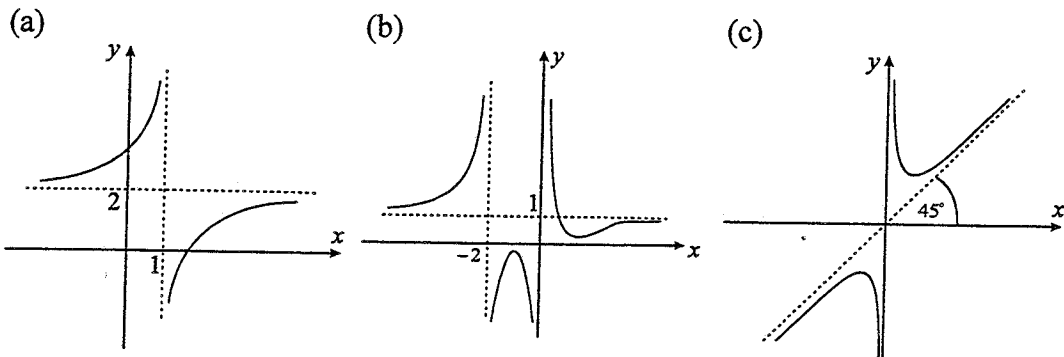


EXERCISE 10H

ASYMPTOTES

1. State all asymptotes for the functions graphed below.



2. Find any asymptotes for the following rational functions:

(a) $y = \frac{1}{x+3}$	(b) $y = \frac{7}{1-x}$	(c) $y = \frac{3}{5x+1}$
(d) $y = \frac{x-2}{x-3}$	(e) $y = \frac{3x-1}{x+4}$	(f) $y = \frac{7x+3}{4x-5}$
(g) $y = x + \frac{1}{x}$	(h) $y = 2 - \frac{1}{x+1}$	(i) $y = 3x - \frac{2}{x+2}$

3. Find any asymptotes for the following rational functions

(a) $y = \frac{7}{x^2-1}$	(b) $y = \frac{x}{x^2+x}$	(c) $y = \frac{x^2-2x+3}{x}$
(d) $y = \frac{x+1}{x^2+1}$	(e) $y = \frac{3x^2+1}{x^2-4}$	(f) $y = \frac{5x^2}{x^2-2x+1}$

ANSWERS

1.
 - (a) H.A. $y = 2$, V.A. $x = 1$
 - (b) H.A. $y = 1$, V.A. $x = -2$ & $x = 0$ (y -axis)
 - (c) O.A. $y = x$, V.A. $x = 0$ (y -axis)

2.
 - (a) H.A. $y = 0$ (x -axis), V.A. $x = -3$
 - (b) H.A. $y = 0$ (x -axis), V.A. $x = 1$
 - (c) H.A. $y = 0$ (x -axis), V.A. $x = -\frac{1}{5}$
 - (d) H.A. $y = 1$, V.A. $x = 3$
 - (e) H.A. $y = 3$, V.A. $x = -4$
 - (f) H.A. $y = \frac{7}{4}$, V.A. $x = \frac{5}{4}$
 - (g) O.A. $y = x$, V.A. $x = 0$ (y -axis)
 - (h) H.A. $y = 2$, V.A. $x = -1$
 - (i) O.A. $y = 3x$, V.A. $x = -2$

3.
 - (a) H.A. $y = 0$ (x -axis), V.A. $x = 1$ & $x = -1$
 - (b) H.A. $y = 0$ (x -axis), V.A. $x = -1$
 - (c) O.A. $y = x - 2$, V.A. $x = 0$ (y -axis)
 - (d) H.A. $y = 0$ (x -axis)
 - (e) H.A. $y = 3$, V.A. $x = 2$ & $x = -2$
 - (f) H.A. $y = 5$, V.A. $x = 1$