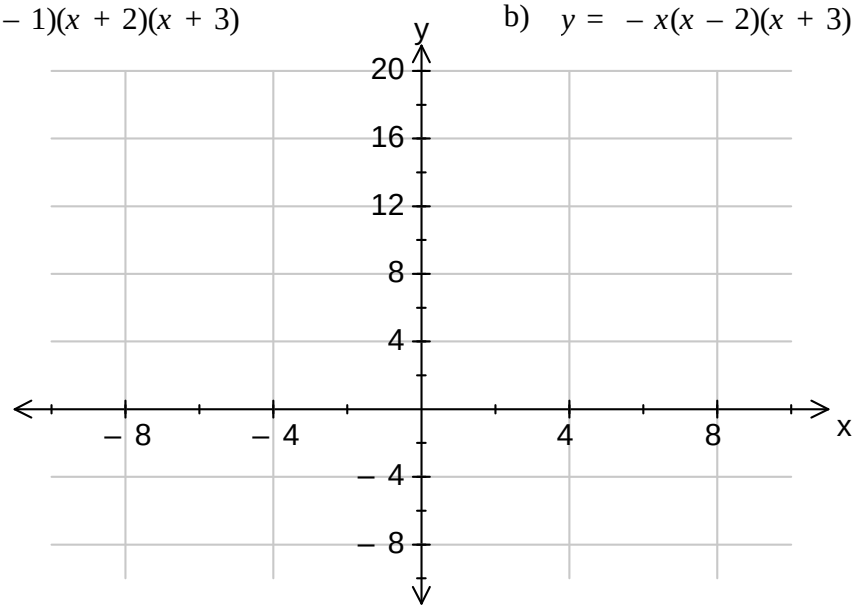
(C1-4.1) Name:

Homework Questions 1 – Cubic Graphs

1. Plot the following graphs on the axis below

a) $y = (x - 1)(x + 2)(x + 3)$

b) $y = -x(x - 2)(x + 3)$



2. Find the y intercept of the following graphs

a) $y = (x + 4)(x - 2)(x + 6)$ Y intercept =

b) $y = x(x - 3)(x + 5)$ Y intercept =

c) $y = (x - 4)(x - 1)(x + 2)$ Y intercept =

d) $y = (x - 9)(3x + 2)(5x - 1)$ Y intercept =

3. Find the x intercepts of the following graphs

a) $y = (x - 6)(x - 4)(x - 2)$ X intercept =

b) $y = x(x + 3)(x - 5)$ X intercept =

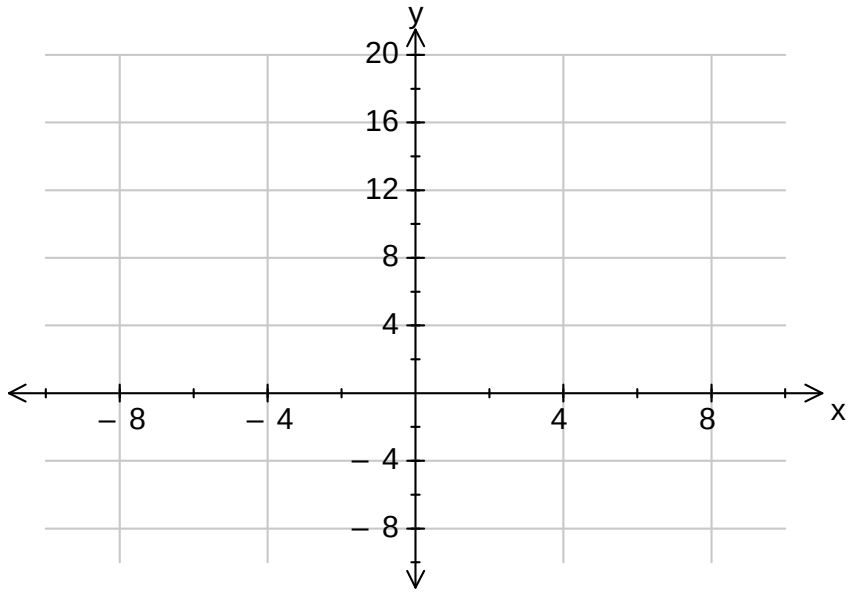
c) $y = (2x - 3)(x - 7)(7x - 2)$

X intercept =

d) $y = (3x + 2)(x - 4)(4x - 1)$

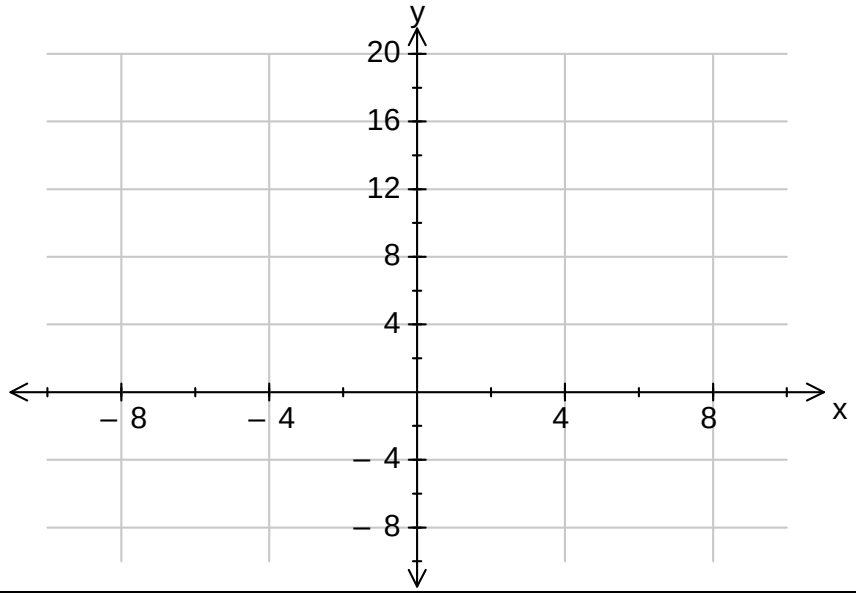
X intercept =

4. Draw the graph and state the special features of $y = (x - 2)(x - 1)(x + 1)$



Special Features

5. Draw the graph and state the special features of $y = x^3 - 9x$



Special Features

(C1-4.2) Name:

Homework Questions 2 – Transformation of Cubic Graphs

The basic cubic graph is $y = x^3$ describe the transformation/s that has taken place to make the following graphs

a) $y = -x^3$

b) $y = 4x^3$

c) $y = x^3 + 5$

d) $y = (x - 3)^3 - 4$

e) $y = \frac{2}{3}x^3$

f) $y = -(x + 6)^3$

g) $y = x^3 - 9$

h) $y = x^3 - 2$

i) $y = (x - 1)^3 - 3$

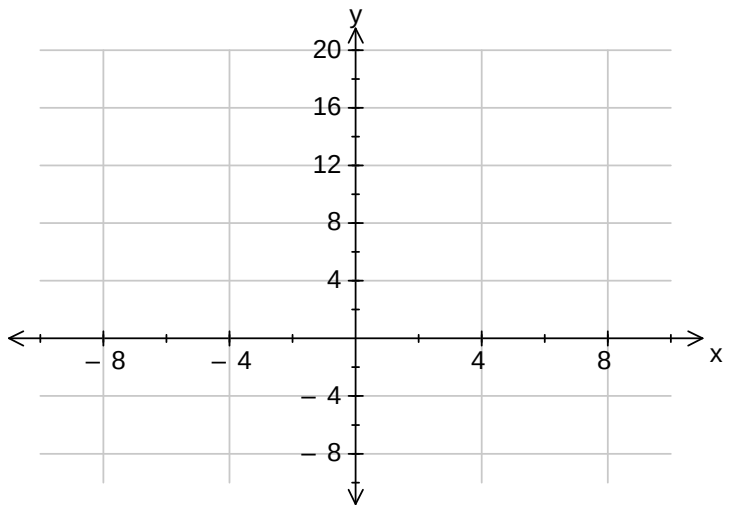
j) $y = -3(x + 5)^3 - 8$

(C1-4.3) Name:

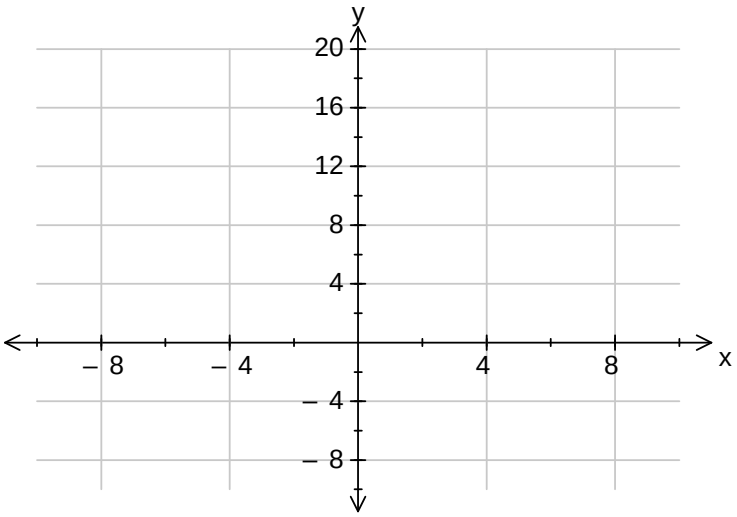
Homework Questions 3 – Reciprocal Function

4. Plot the following graphs on the axis below

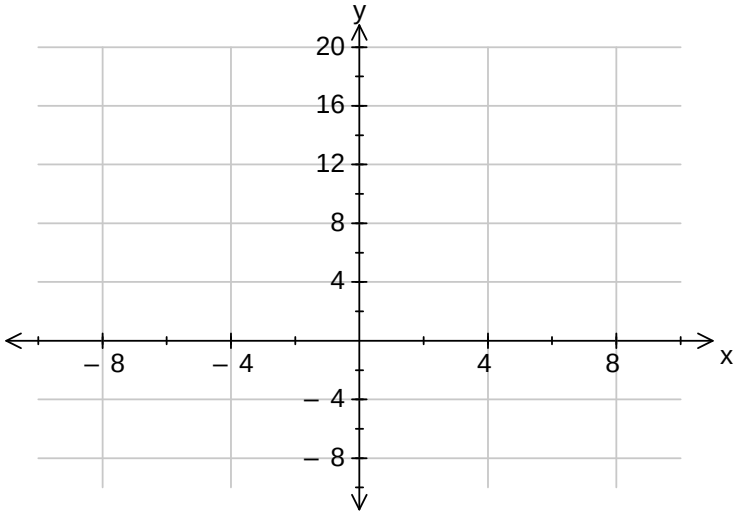
a) $y = \frac{6}{x}$



b) $y = -\frac{8}{x}$



c) $y = \frac{12}{x}$

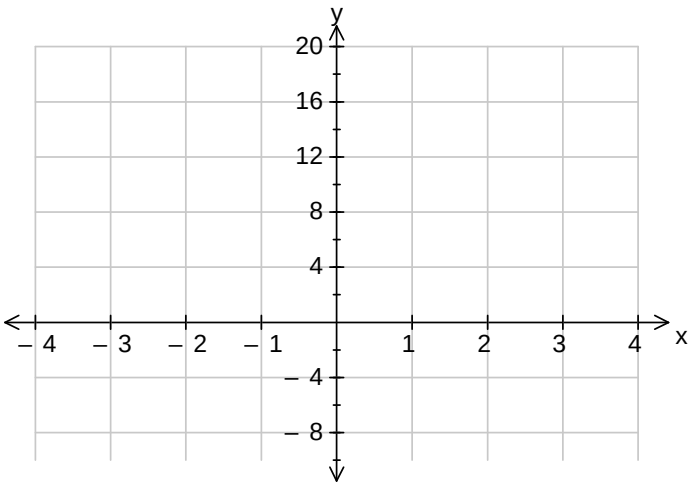


(C1-4.4) Name:

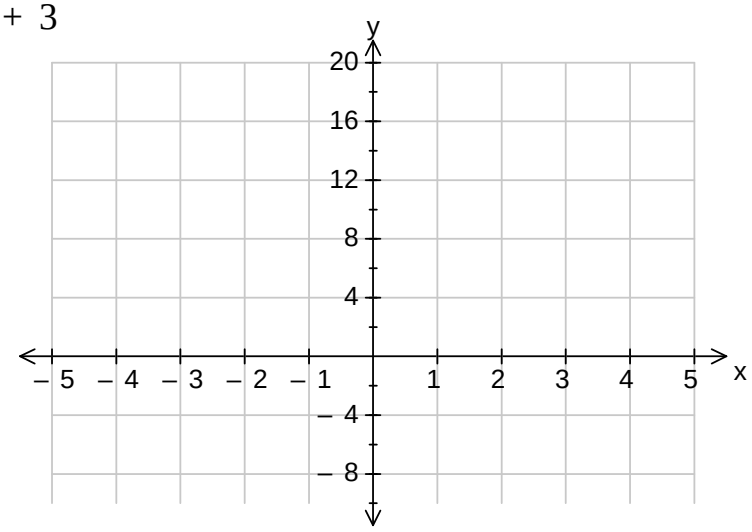
Homework Questions 4 – Sketching Curves to Find Intersections

a) Plot the following pairs of graphs on the axis below
b) State the number of points of intersection
c) Write down a suitable equation which would give the x coordinates of the point of Intersection
d) Find the x coordinates of the points of intersection

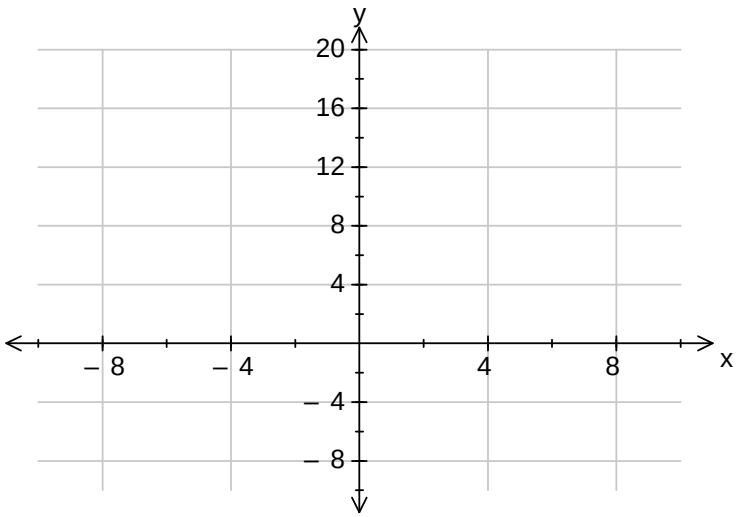
a) $y = x^2$ $y = x(x^2 - 3)$



b) $y = 5x$ $y = (x - 2)^2 + 3$



c) $y = \frac{4}{x}$ $y = x - 3$

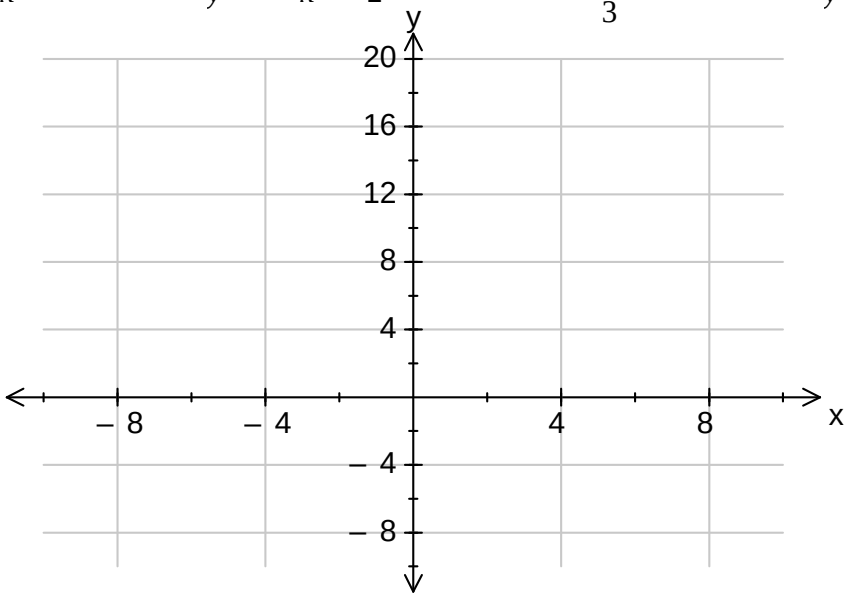


(C1-4.5) Name:

Homework Questions 5 – Parabola Graphs

5. Plot the following graphs on the axis below

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



6. Find the y intercept of the following graphs

a) $y = x^2 - 6$ Y intercept =

b) $y = (x - 3)^2$ Y intercept =

c) $y = -x^2 + 2$ Y intercept =

d) $y = -(x + 1)^2 + 3$ Y intercept =

7. Find the x intercept of the following graphs

a) $y = (x + 3)(x - 6)$ X intercept =

b) $y = x(x + 9)$ X intercept =

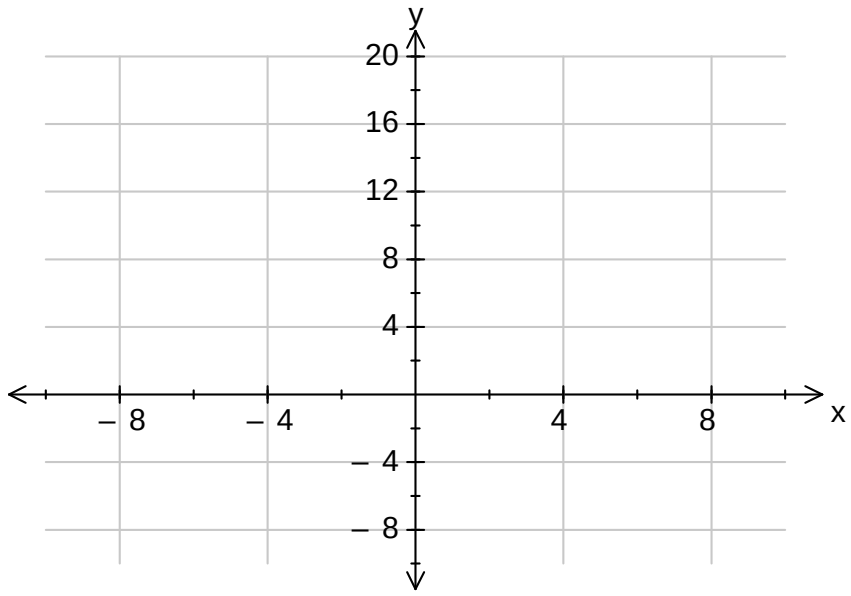
c) $y = x^2 + 7x + 12$

X intercept =

d) $y = 3x^2 + 10x - 8$

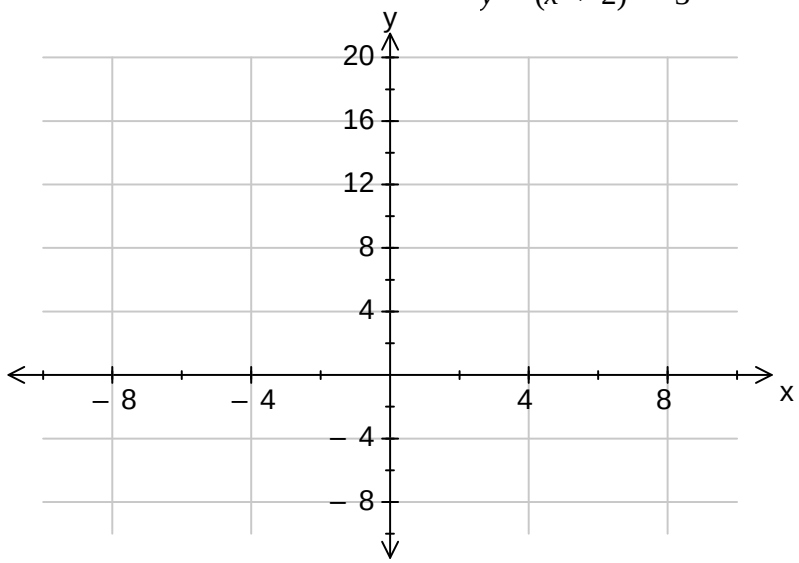
X intercept =

4. Draw the graph and state the special features of $y = 2x^2 - 3$



Special Features

5. Draw the graph and state the special features of $y = (x + 2)^2 - 3$



Special Features

(C1-4.6) Name:

Homework Questions 6 – Transformation of Parabolas Graphs

The basic Parabola graph is $y = x^2$ describe the transformation/s that has taken place to make the following graphs

a) $y = -x^2$

b) $y = 3x^2$

c) $y = x^2 - 5$

d) $y = (x + 3)^2$

e) $y = \frac{1}{5}x^2$

f) $y = -(x - 2)^2$

g) $y = x^2 + 8$

h) $y = -6x^2 - 4$

i) $y = (x + 3)^2 + 2$

j) $y = -3(x - 4)^2 - 6$

(C1-4.7) Name:

Homework Questions 7 – Transformation of Any Graphs

1. The curve with equation y=f(x) passes through the points A(1,2) B(2,10) and C(-4,46). Give the coordinates of A,B&C after the following transformations

a) $f(x - 2)$

b) $f(x) - 4$

c) $3f(x)$

d) $-f(2x)$

2. The reciprocal function has the equation $y = \frac{4}{x} - 3$ State the equation of the asymptotes after the following transformations

e) $f(x - 4)$

f) $f(x) + 1$

g) $f(x + 2) - 3$

h) $y = (x - 1) + 7$