STATION Q

Simplify (Rationalize the denominator if necessary)

a) $\sqrt{32}$

b) $(4\sqrt{6})^2$

c) $(2\sqrt{15})(5\sqrt{3})$

d) $\dfrac{\sqrt{54}}{\sqrt{3}}$

e) $3\sqrt{8} - 2\sqrt{18} + 5\sqrt{72}$

f) $\sqrt[4]{32} - 3\sqrt[5]{96} + 2\sqrt[4]{162} - \sqrt[5]{729}$

STATION U

Simplify (Rationalize the denominator if necessary)

a) $\dfrac{2\sqrt{12}}{-\sqrt{72}}$

b) $\dfrac{\sqrt{75}-15\sqrt{6}}{5\sqrt{3}}$

c) $\dfrac{4\sqrt{2}}{5\sqrt{2}+6}$

STATION A_1

Determine an equation of a parabola, in standard form, that passes through the point (7, - 2) and has x intercepts of $\sqrt{2}$ and $-\sqrt{2}$

STATION D

State the maximum or minimum value for each of the following using an appropriate method given the quadratic form.

a) $y = -5(x-12)^2 - 15$

b) $y = (x-6)(x+10)$

c) $y = -2x(x-3) + 5$

STATION R

Solve

a) $0 = 2x^2 + 5x + 4$

b) $0 = 16x^2 - 1$

c) $0 = -2(x - 8)^2 + 72$

STATION A_2

Graph the two quadratics using different methods.

a) $y = 2x^2 + 4x - 6$

b) $y = -\frac{1}{2}x^2 - 4x - 3$

STATION T

For what value(s) of k will the graph of $y = 2x^2 + 4kx + k$ have one solution?

STATION I

A small rocket is shot into the air. Its height h, in metres, after t seconds is $h = -4.9t^2 + 39.2t + 1.75$

(Round all answers to two decimals)

a) What is the initial height of the rocket?

b) What is the maximum height of the rocket and when does it occur?

c) How long is the rocket above at or above 5 metres? (round to two decimals)

STATION C

While training for his jump from space, Austrian daredevil Felix Baumgartner jumped from the CN tower, free falling for several seconds before opening his parachute.

His height , h , in metres and time, t in seconds after jumping can be modelled by

$h_1 = -4.9t^2 + t + 344$, before the release of the parachute; and $h_2 = -3t + 122$, after the release of the parachute.

How long after jumping did Felix release his parachute? (round to two decimal places)