Solve

$$7(3x - 1) + 2(x + 7) = 3(6x - 1)$$

Solve $\sqrt{3x + 10} = 4$
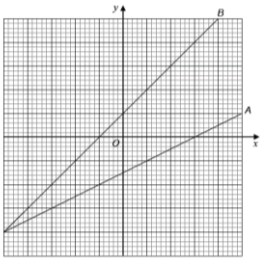
The nth terms of two sequences are

$$4n + 13 \text{ and } 6n - 21$$

Which term has the same value in each sequence?

The first five terms of a quadratic sequence are

$$4 \quad 10 \quad 18 \quad 28 \quad 40$$

Work out an expression for the nth term.

The graph shows two lines A and B.
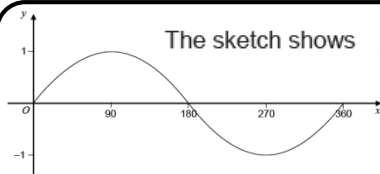
The equation of line B is $y = 2x + 2$

Work out the equation of line A.

Work out $2\frac{2}{3} - 1\frac{3}{4} \div 1\frac{1}{8}$

Give your answer as a fraction in its simplest form.

Make d the subject of

$$c = \frac{8(c - d)}{d}$$

The sketch shows $y = \sin x$ for $0° \leqslant x \leqslant 360°$

The value of $\sin 73° = 0.956$ to 3 significant figures.

Use the sketch to find **two** angles between 0° and 360° for which $\sin x = -0.956$

Write $\sqrt{75} + \sqrt{12}$ in the form $a\sqrt{b}$

where a and b are integers.

Work out the coordinates of the stationary point for the curve

$$y = x^2 + 3x + 4$$

sketch the graph of

$$y = x^2 - 9$$

Solve $x^{\frac{2}{3}} = 9$

Write down all the integer solutions to

$$x^2 - 9 < 0$$

Rationalise and simplify $\dfrac{2\sqrt{2} + 1}{\sqrt{2} - 3}$

a, b, c and d are consecutive integers.

Explain why $ab + cd$ is always even.

The nth term of a sequence is given by $\frac{3n+1}{6n-5}$

Write down the first, tenth and hundredth terms of the sequence.

Work out the distance between

the point $A(1, 4)$
and the point $B(7, 12)$.

The function f(x) is defined as $f(x) = x^2 + x$

Write down the value of $f(7)$

The function f(x) is defined as $f(x) = x^2 + x$

Solve $f(x) = 0$

Expand and simplify

$(x - 5)(x^2 + 4x - 2)$

Solve the simultaneous equations

$y^2 = x + 3$ and $y = 2x$

Do **not** use trial and improvement.

A triangle has sides 10.2 cm, 6.8 cm and 5.7 cm.

Work out the area of the triangle.

Area of triangle $= \frac{1}{2}ab \sin C$

Cosine rule $a^2 = b^2 + c^2 - 2bc \cos A$

$y = x^4(2x + 5)$

Work out the rate of change of y
with respect to x when $x = 2$

Factorise fully

$x^3 - 4x^2 - 11x + 30$

The function f(x) is defined as $f(x) = x^2 + x$

Write an expression for $f(x + 1) - f(x)$

Give your answer in its simplest form.

Write $\dfrac{a^{\frac{1}{2}} \times a^{\frac{3}{2}}}{(a^3)^4}$

as a single power of a.

Factorise fully

$(x^2 - 16) - (x - 4)(3x + 5)$

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n is an integer.
Prove that
$(n - 2)^2 + n(8 - n)$
is always a multiple of 4.