Starter

1. Factorise: $x^2 - x - 6$

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

2. Solve for x:
$2(x + 1) = x - 1$

$2x+2=x-1$
$-x \quad -x$
$x+2=-1$
$-2 \quad -2$
$x=-3$

3. Factorise: $x^2 - 25$

$(x-5)(x+5)$

4. Factorise: $2x^2 - 8x$

$2x(x-4)$

5. State the gradient of the line: $4y + 12 = 2x$

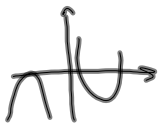
$4y=2x-12$
$y=\frac{1}{2}x-3$
$m=\frac{1}{2}$

Apr 26-17:43

Today's Learning:

To solve quadratic equations.

$x^2-x-6=0$
$(x-3)(x+2)=0$
$x-3=0$ or $x+2=0$
$x=3$ or $x=-2$



$a \times b = 0$
a or $b = 0$

Apr 26-18:27

Solving Quadratic Equations 27/4/16

A quadratic equation can be written as $ax^2 + bx + c = 0$

Then, we can solve by factorising.

Examples:

1) $x^2 - 2x - 35 = 0$

$(x-7)(x+5)=0$
$x-7=0$ or $x+5=0$
$x=7$ or $x=-5$

2) $2x^2 + 10x = 0$

$2x(x+5)=0$
Ref 0 or
$x+5=6$
$x=0$ or $x=-5$

$\frac{5}{3}t^2 - 16 = 0$

Apr 26-18:40

Starter

1. Simplify $x^2y^{-3} \times x^4y$

x^6y^{-2}

2. Simplify $\frac{\sqrt{40}}{\sqrt{5}}$

$\sqrt{8} \times \sqrt{5}$
$=\sqrt{8}\sqrt{5}$
$=\sqrt{4 \times 2} = 2\sqrt{2}$

3. Factorise $6x^2+7x+2$

$(3x+2)(2x+1)$

4. Solve the inequality: $15-2p \geq p+3$

$15 \geq 3p+3$
$12 \geq 3p$
$4 \geq p$
$p \leq 4$

5. Find $\frac{5}{6} \div \frac{1}{3}$

$\frac{5}{6} \times \frac{3}{1}$
$= \frac{15}{6} = \frac{5}{2}$

Apr 28-10:22

Today's Learning:

To solve quadratic equations where a ≠ 1.

$ax^2+bx+c=0$

Apr 28-10:33

Solving Quadratic Equations

Examples:

1) $2x^2-5x-12=0$ 3,4

$(2x+3)(x-4)=0$
$2x+3=0$ or $x-4=0$
$2x=-3$ $\quad x=4$
$x=\frac{-3}{2}$

2) $10x^2+11x+3=0$

$(2x+1)(5x+3)=0$
$2x+1=0$ or $5x+3=0$
$2x=-1$ $\quad 5x=-3$
$x=\frac{-1}{2}$ $\quad x=\frac{-3}{5}$

Apr 28-10:34

Finding a Formula

$$ax^2+bx+c=0$$
$$a\left(x^2+\frac{b}{a}x+\frac{c}{a}\right)=0$$
$$a\left(\left(x+\frac{b}{2a}\right)^2-\frac{b^2}{4a^2}+\frac{c}{a}\right)=0$$
$$a\left(x+\frac{b}{2a}\right)^2-\frac{b^2}{4a}+c=0$$
$$a\left(x+\frac{b}{2a}\right)^2=\frac{b^2}{4a}-c$$
$$\left(x+\frac{b}{2a}\right)^2=\frac{b^2}{4a^2}-\frac{c}{a}$$
$$x+\frac{b}{2a}=\pm\sqrt{\frac{b^2-4ac}{4a^2}}$$
$$x=-\frac{b}{2a}\pm\frac{2a\sqrt{\frac{b^2-4ac}{4a^2}}}{2a}$$
$$x=-\frac{b}{2a}\pm\frac{\sqrt{\frac{4a^2(b^2-4ac)}{4a^2}}}{2a}$$
$$x=-\frac{b}{2a}\pm\frac{\sqrt{b^2-4ac}}{2a}$$
$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$

May 1-16:53

The Quadratic Formula

If we have an equation $ax^2 + bx + c = 0$ that we can't factorise, we can use the Quadratic Formula to find solutions:

$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$ (given in exams)

Examples:

1) $x^2-5x-14=0$

$a=1 \quad b=-5 \quad c=-14$

$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$

$=\frac{5\pm\sqrt{(-5)^2-4(1)(-14)}}{2}$

2) $x^2+4x+1=0$

May 1-17:03

Starter

1. Simplify $\frac{\sqrt{72}}{3}$

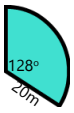
$=\frac{\sqrt{9}\times\sqrt{8}}{3}$ $\sqrt{8}=\sqrt{4}\sqrt{2}$

$=\frac{3\sqrt{8}}{3}$ $=2\sqrt{2}$

$=\sqrt{8}$

$=\sqrt{4}\sqrt{2}=2\sqrt{2}$

2. Find the length of the arc:



$\frac{128}{360}\times\pi\times d$

$=\frac{128}{360}\times\pi\times40=44.7m$

3. Simplify $\frac{x^2\left(y^2\right)^4}{xy^5}$

$=\frac{x^2y^8}{xy^5}$

$=xy^3$

4. Find the gradient of the straight line that joins the points (3, 4) and (7, 10).

$m=\frac{10-4}{7-3}$

$=\frac{6}{4}=\frac{3}{2}$

May 3-17:44

Today's Learning:

Practising solving equations using the quadratic formula.

May 3-17:45

$ax^2 + bx + c = 0$ $\quad x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$

Solve the following equation to 2 decimal places:

$$x^2+2x-4=0$$

$a=1 \quad b=2 \quad c=-4$

$x=\frac{-2\pm\sqrt{2^2-4(1)(-4)}}{2}$

$x=\frac{-2\pm\sqrt{4+16}}{2}$

$x=\frac{-2\pm\sqrt{20}}{2}$ $\sqrt{4\times5}=2\sqrt{5}$

$=\frac{-2\pm2\sqrt{5}}{2}$

$=-1\pm\sqrt{5}$

$x=-1+\sqrt{5}$ or $x=-1-\sqrt{5}$

$=1.24$ $=-3.24$

May 3-17:46

Starter

1. Change the subject of the formula to a:

$4(a + b)^2 = c$

$\div4 \quad \div4$

$(a+b)^2=\frac{c}{4}$

$a+b=\sqrt{\frac{c}{4}}$

$-b \quad -b$

$a=\sqrt{\frac{c}{4}}-b$

2. Evaluate $8^{\frac{5}{3}}$

$=\sqrt[3]{8^5}$

$=2^5$

$=32$

3. Express $\frac{4}{\sqrt{8}}$ with a rational denominator.

$\frac{4}{\sqrt{8}}\times\frac{\sqrt{8}}{\sqrt{8}}=\frac{4\sqrt{8}}{8}$

$=\frac{\sqrt{8}}{2}=\frac{\sqrt{4\times2}}{2}$

$=\frac{2\sqrt{2}}{2}=\sqrt{2}$

4. Evaluate $6\frac{1}{5}-2\frac{1}{3}$

$=\frac{31}{5}-\frac{7}{3}$

$=\frac{93}{15}-\frac{35}{15}$

$=\frac{58}{15}$

$=3\frac{13}{15}$

May 4-09:05

Today's Learning:

To practise using the quadratic formula to solve more difficult equations.

May 4-09:05

Starter - No Calculators!

1. If a = 3 and b = - 4, evaluate $\frac{4(a - b) + b^2}{11}$

$= \frac{4(3+4)+(-4)^2}{11}$

$= \frac{12+16}{11} + \frac{16}{11} = \frac{44}{11} = 4$

2. Simplify: $\frac{a^5(b^2)^3}{a^5 b}$

$a^5 \cdot b^6 \div a^5 b$

$= b^5$

3. The area is 30cm². Find p.

$5 \times 12 = 60$

$\frac{1}{2} \times b \times h = 30$

$\frac{1}{2} \times 5 \times h = 30$ ÷5

$\frac{1}{2} \times h = 6$ ×2

$h = 12$cm

4. Evaluate $16^{\frac{3}{4}}$

$\sqrt[4]{16^3}$

$= 2^3$

$= 8$

May 7-18:40

Solve to 2 decimal places:

$$x = \frac{-5 \pm \sqrt{10}}{4}$$

x = -0.46 or -2.04

May 7-18:40

Solve to 2 decimal places:

$$x = \frac{4 \pm \sqrt{4^2 - 4(1)(1)}}{2}$$

$4 + \sqrt{16 - 4}$

$4 + \sqrt{(16-4)}$

x = 3.73 or 0.27

May 7-18:40

Solve to 2 decimal places:

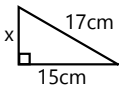
$$x = \frac{-7 \pm \sqrt{7^2 - 4(3)(-2)}}{6}$$

x = 0.26 or -2.59

May 7-18:40

Starter

1) Find x:



$x^2 = 17^2 - 15^2$

$x^2 = 289 - 225$

$x = 8$

2) Factorise the expression:

$2x^2 + 13x + 8$

$(2x \quad)(x \quad)$

3) Calculate $6\frac{2}{3} - 3\frac{1}{4}$

$= \frac{20}{3} - \frac{13}{4}$

$= \frac{80}{12} - \frac{39}{12}$

$= \frac{41}{12}$

$= 3\frac{5}{12}$

4) List all the prime numbers that are smaller than 20

2 3 5 7 11 13 17 19

May 9-18:57

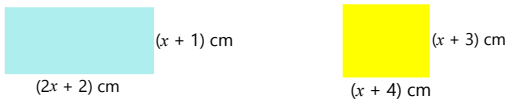
Today's Learning:

To be able to solve problems using quadratic equations.

May 9-18:58

The **areas** of these rectangles are equal.

a) Find the value of x. b) Calculate the area of the rectangles.



$(x+1)(2x+2) = (x+3)(x+4)$

$2x^2 + 4x + 2 = x^2 + 7x + 12$

$x^2 - 3x - 10 = 0$

$(x + 2)(x - 5) = 0$

$x = -2$ or 5

-2 not possible

so $x = 5$.

Area $= (2x+2)(x+1)$

$= (10+2)(5+1)$

$= 12 \times 6$

$= 72\ cm^2$

May 9-18:58

Starter

1) Solve the following equations:

a) $2x^2 - 2x - 24 = 0$

b) $8x^2 - 13x - 6 = 0$

a) $(x-4)(2x+6) = 0$

$x - 4 = 0$ or $2x + 6 = 0$

$x = 4$ or $x = -3$

$x^2 - x - 12 = 0$

$(8x+3)(x-2) = 0$

$x = \frac{-3}{8}$ or $x = 2$.

2) Solve the equation to 1 decimal place:

$3x^2 - x - 6 = 0$

$a = 3 \quad b = -1 \quad c = -6$

$x = \frac{1 \pm \sqrt{(-1)^2 - 4(3)(-6)}}{6}$

$= \frac{1 \pm \sqrt{73}}{6}$

$x = 1.6$ or -1.3

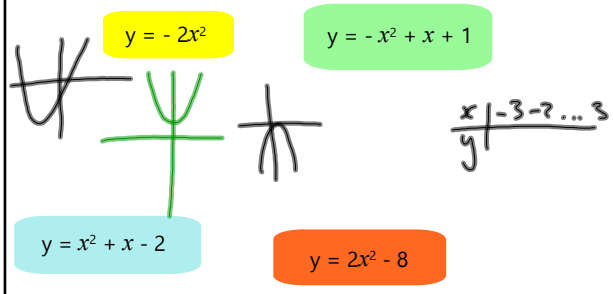
May 11-15:09

Today's Learning:

Considering quadratic graphs and their features.

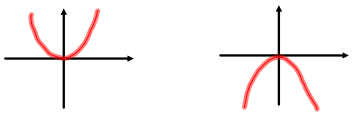
May 11-15:34

What are the features of a quadratic graph?



May 11-15:18

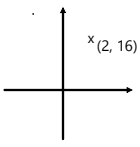
Graph of $y = kx^2$



positive k negative k

Example:

Find k from the graph of $y = kx^2$:



$y = kx^2$ $(2, 16)$ (x, y)

$16 = k(2^2)$

$16 = 4k$

$k = 4$

May 11-15:34

Starter

1) If a = -3, evaluate: $-2a^2 + 3a$

$-2(-3)^2 + 3(-3)$

$= -18 + (-9)$

$= -27$

2) Simplify: $\frac{6}{2x} + \frac{4}{x-3}$

$\frac{6(x-3)}{2x(x-3)} + \frac{8x}{2x(x-3)}$

$= \frac{6x-18}{2x(x-3)} + \frac{8x}{2x(x-3)}$

$= \frac{14x-18}{2x(x-3)} = \frac{7x-9}{x(x-3)}$

3) Find b:

$\cos x° = \frac{a}{h}$

$\cos 35° = \frac{10}{b}$ ×b ×b

$b\cos 35 = 10$

$b = \frac{10}{\cos 35}$

$= 12.21\text{cm}$

4) What is 40ml increased by 20% ?

10% = 4ml

20% = 8ml

48ml

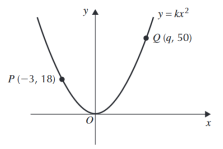
40×1.2

May 12-14:40

The diagram shows part of the graph of the function $y = kx^2$. The points $P(-3, 18)$ and $Q(q, 50)$ are on the graph.

a Find the value of k.

b Find the value of q.



a) $y = kx^2$

$18 = 9k$

$k = 2.$

b) $y = 2x^2$ $(q, 50)$

$50 = 2q^2$

$25 = q^2$

$q = 5.$

May 12-14:43

What is the equation of this graph? $y+2=kx^2$

$y = x^2$

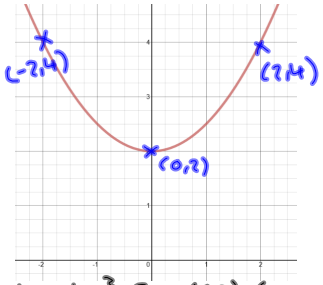
$2y = kx^2$

$y = kx^2 + 2$

$x.2y = kx^2$ $(0,0)$

$2y = k(0)$

$y = 0$



$y = kx^2 + 2$ $(0,2)$ ✓

$4 = k(2)^2 + 2$

$4 = 4k + 2$

$2 = 4k$

$k = \frac{1}{2}$

May 12-14:46

Today's Learning:

To recognise the graph of $y = kx^2 + q$ and be able to find k and q from a graph.

May 12-14:45

The graph of $y = x^2 + q$

moved up by q

positive q

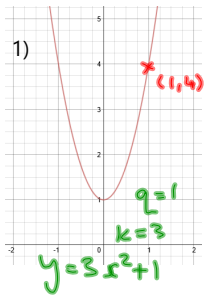
negative q

moved down by q

May 12-14:56

Find the equations of these graphs, of the form $y = kx^2 + q$

1)

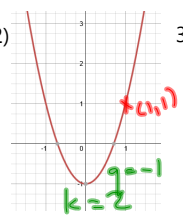


$q = 1$

$k = 3$

$y = 3x^2 + 1$

2)

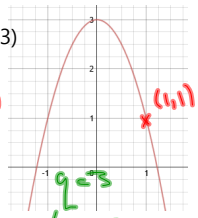


$q = -1$

$k = 2$

$y = 2x^2 - 1$

3)



$q = 3$

$k = -2$

$y = -2x^2 + 3$

May 12-15:17

Starter

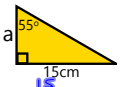
1) If these rectangles have the same area, find x:

$x(2x-2) = 5(2x)$
$2x^2 - 2x = 10x$
$2x^2 - 12x = 0$
$2x(x-6) = 0$
$x = 0$ or $x = 6$
$x = 6$

2) Simplify $a^4b^{-1} \times ab^5$

a^5b^4

3) Find a:



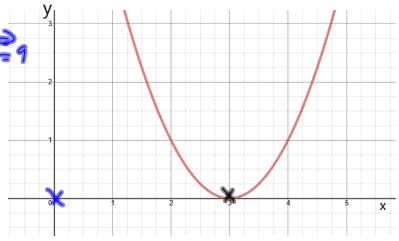
$\tan 55 = \frac{15}{a}$
$a = \frac{15}{\tan 55}$
$= 10.5\text{cm}$

4) Calculate $25^{\frac{3}{2}}$

$\sqrt{25}^3$
$= 5^3$
$= 125$

May 14-18:21

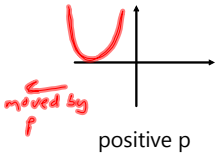
This quadratic graph has been shifted to the right. Can you find its equation?



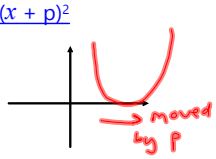
$y = x^2$ $x = 3 \Rightarrow y = 9$
$y = 3x^2$
$y = (x-3)^2$
$y = (x+3)^2$
$x = -3$ $y = 9$
$y = (x-3)^2$
$x = 3, y = 0$

May 14-18:31

The graph of $y = (x + p)^2$



positive p

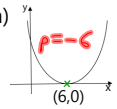


negative p

May 14-18:34

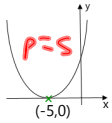
1) Find p for these graphs of $y = (x + p)^2$:

a)



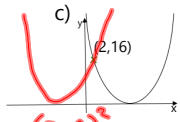
$p = -6$

b)



$p = 5$

c)



$16 = (2+p)^2$
$\pm 4 = 2 + p$
$p = 2$ or -6

May 14-18:36

Starter

1) Find a and b, given:

$2a - b = 2$
$a + b = 7$
$3a = 9$
$a = 3$
$3 + b = 7$
$b = 4$

2) Calculate $3 \times 10^4 \times 7 \times 10^2$, giving your answer in scientific notation

21×10^6
$= 2.1 \times 10^7$

3) Make g the subject of the fomula

$T = 5 - \frac{L}{g}$

$Tg = 5g - L$
$Tg - 5g = -L$
$g(T-5) = -L$
$g = \frac{-L}{(T-5)}$
$Tg + L = 5g$
$\frac{Tg+L}{5} = g$

4) Round to 3 sig. fig.

0.30509

0.305

May 16-17:47

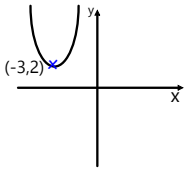
Today's Learning:

To find p and q from the graph of $\mathbf{y = (x + p)^2 + q}$.

May 16-18:14

The graph of y = (x +p)² + q

Example:

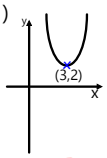


p = 3
q = 2

May 16-18:20

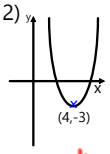
For each of these graphs of the form y = (x +p)² + q, find p and q:

1)



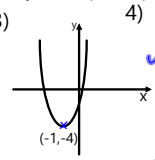
p=-3
q=2

2)



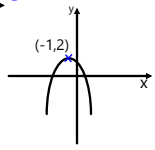
p=-4
q=-3

3)



p=1
q=-4

4) y=(x+1)²+2
y=-(x+1)²+2



p=1
q=2

May 16-18:18

Starter

1) Solve for x:

$x^2 + 5x - 24 = 0$

$(x-3)(x+8)=0$

$x=3$ or $x=-8$

2) Find the area of the sector:

$\frac{62}{360} \times \pi \times 12^2$

$= 77.91 cm^2$

3) Round 3.40126 to 4 sig. fig.

3.401

4) Rearrange for h: $a = \frac{3}{h+5}$

$a(h+5) = 3$

$ah + 5a = 3$

$ah = 3 - 5a$

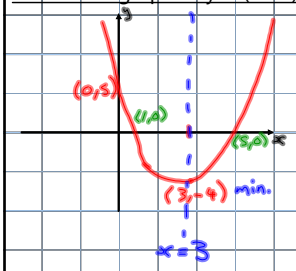
$h = \frac{3-5a}{a}$

$\frac{3}{a} - 5$

$h = \frac{3-5a}{a}$

May 18-12:01

Sketch the graph of y = (x - 3)² - 4



y intercept:
set x=0
$y = (0-3)^2 - 4$
$= 9 - 4$
$= 5$.

Roots: set y=0
$0 = (x-3)^2 - 4$
$= (x-5)(x-3) - 4$
$= x^2 - 3x - 3x + 9 - 4$
$= x^2 - 6x + 5$
$= (x-5)(x-1)$
$x = 5$ or 1

May 18-12:03

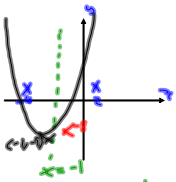
Sketching Quadratic Graphs

Sketches of quadratic graphs can involve finding:

- roots (where graph cuts the x-axis)
- the y-intercept
- the equation of the line of symmetry
- the coodinates of the turning point and its nature

Examples

1) Sketch the graph of y = (x + 1)² - 9



Roots: set y=0
$0 = (x+1)^2 - 9$
$= (x+1)(x+1) - 9$
$= x^2 + x + x + 1 - 9$
$= x^2 + 2x - 8$
$= (x+4)(x-2)$
$x = -4$ or 2

Eq of axis of symmetry: x=-1
TP is at (-1,-9)
minimum TP

Cuts y-axis: x=0
$y = (0+1)^2 - 9$
$= -8$

May 18-12:08

Starter

1) Simplify $\sqrt{x} \times (x^2)^3$

$= \sqrt{x} \times x^6$

$= x^{\frac{1}{2}} \times x^6$

$= x^{6\frac{1}{2}} = x^{\frac{13}{2}}$

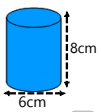
2) Calculate $2\frac{2}{5} \div \frac{9}{15}$

$\frac{12}{5} \div \frac{9}{15}$

$= \frac{12}{5} \times \frac{15}{9}$

$= \frac{180}{45} = 4$.

3) Calculate the volume of the cylinder:



$V = \pi \times 3^2 \times 8$

$= 226.19 cm^3$

4) A car was bought two years ago and has since lost 30% of its value. If its current value is £6300 then what was its original value?

70% = £6300
10% = £900
100% = £9000

May 19-13:50

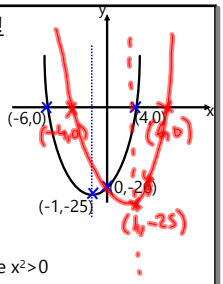
$y = (x - 1)^2 - 25$ Spot the mistake(s)!

Roots: $0 = x^2 - 2x - 24$
$= (x + 4)(x - 6)$
$x = 4$ or -6 -4 or 6

y intercept: $y = (-1)^2 - 25$
$= -26$ -24

Equation of axis of symmetry: $x = -1$

TP occurs at $(-1, -25)$ and is a minimum because $x^2 > 0$
$(1, -25)$



May 19-13:54

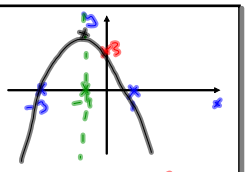
Today's Learning:

To sketch the graph of $-(x + p)^2 + q$.

May 19-13:51

2) Sketch the graph of $y = -(x + 1)^2 + 4$

Roots: Set $y = 0$
$0 = -(x+1)^2 + 4$
$= -((x+1)(x+1)) + 4$
$= -(x^2 + 2x + 1) + 4$
$= -x^2 - 2x - 1 + 4$
$0 = -x^2 - 2x + 3$
$x^2 + 2x - 3 = 0$
$(x - 1)(x + 3) = 0$
$x = 1$ or -3



y-intercept: Set $x = 0$
$y = -(0+1)^2 + 4$
$= -1 + 4 = 3$

Eq: of line of symmetry: $x = -1$
TP is at $(-1, 4)$
Nature of TP is maximum.

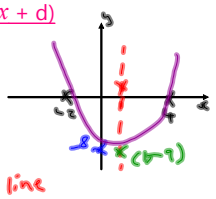
May 19-13:52

Today's Learning:

To sketch graphs of the form $y = (ax + b)(cx + d)$.

May 22-16:00

Sketching $y = (ax + b)(cx + d)$



Roots: let $y = 0$
$0 = (x+2)(x-4)$
$x = -2$ or 4

y intercept: Set $x = 0$
$y = (0+2)(0-4)$
$= (2)(-4)$
$= -8$

eq'n of line of symmetry: $x = 1$

TP: $x = 1$
$y = (1+2)(1-4)$
$= 3x - 3$
$= -9$
minimum

E.g. Sketch the graph $y = (x + 2)(x - 4)$

$y = x^2 - 2x - 8$
$= (x-1)^2 - 9$

May 22-16:02

Starter

1) Write in completed square form:
$m^2 - 8m - 2$
$(m-4)^2 - 18$

2) Change the subject of the fomula to g: $s = 3 - \frac{t}{g}$
$sg = 3g - t$
$g(s-3) = -t$
$g = \frac{-t}{s-3}$

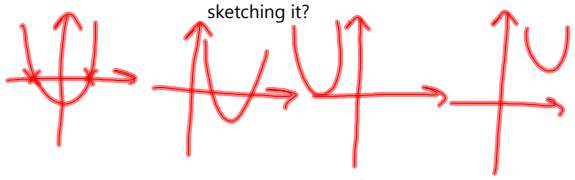
3) Find the highest common factor of $4m^4n^3$ and $12mn^5$
$4mn^3$

4) Calculate (without a calculator) 125^{-3}
$\frac{1}{125^3}$ $125^{\frac{1}{3}}$ $\sqrt[3]{125}$

May 25-18:34

Match the equations to the graphs by finding the roots.

How can we tell a graph only has one root (or no roots at all) without sketching it?



$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$ $0 \Rightarrow 1$ answer

May 25-18:34

The Discriminant

For a quadratic equation $ax^2 + bx + c$ the discriminant is $b^2 - 4ac$.

$b^2 - 4ac > 0$ means 2 real, distinct roots

$b^2 - 4ac = 0$ means 2 real, equal roots

$b^2 - 4ac < 0$ means no real roots

e.g. Determine the nature of the roots of $2(x + 1) = x^2 - 3$

$2x+2 = x^2-3$

$0 = x^2-5-2x-2$

$0 = x^2-2x-5$

$a=1 \quad b=-2 \quad c=-5$

$b^2-4ac = (-2)^2-4(1)(-5)$

$= 4+20$

$= 24$

2 distinct real roots

May 25-19:12

Starter: The Discriminant

The discriminant is $b^2 - 4ac$.

1) Determine the nature of the roots of:

a) $0 = 9x^2 - 6x + 1$

$a=9 \quad b=-6 \quad c=1$

$b^2-4ac = (-6)^2-4(9)(1)$

$= 36-36$

$= 0$

2 real equal roots

b) $4 - x^2 - 2x = 0$

$0 = x^2+2x-4$

$a=1 \quad b=2 \quad c=-4.$

disc = 20

2 real distinct roots

c) $(2x - 1)^2 - 3(x + 1) = 0$

$(2x-1)(2x-1)-3(x+1)=0$

$4x^2-2x-2x+1-3x-3=0$

$4x^2-7x-2=0$

$a=4 \quad b=-7 \quad c=-2$

$disc = (-7)^2-4(4)(-2)$

$= 81$

2 real distinct roots

d) $x(x + 3) = 2x - 3$

$x^2+3x = 2x-3$

$x^2+3x+3 = 2x$

$x^2+x+3=0$

$a=1 \quad b=1 \quad c=3$

$disc = 1^2-4(1)(3)$

$= -11$

May 26-14:44

Find the range of values of k such that $2x^2 + 4x + k = 0$ has real roots.

$a=2 \quad b=4 \quad c=k$

$disc = 16-8k \geq 0$

$16 \geq 8k$

$2 \geq k$

May 26-17:50

Today's Learning:

To use what we have learnt to solve problems.

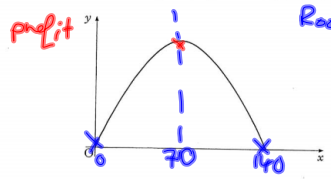
May 26-14:47

The profit made by a publishing company of a magazine is calculated by the formula

$$y = 4x(140 - x),$$

where y is the profit (in pounds) and x is the selling price (pence) of the magazine.

The graph below represents the profit y against the selling price x.



Roots: set $y=0$

$0 = 4x(140-x)$

$x = 0$ or 140

Find the maximum profit the company can make from the sale of the magazine.

$y = 4x(140-x)$

$y = 4(70)(140-70)$

$y = 4(70)(70)$

$= £19\,600$

May 26-18:07