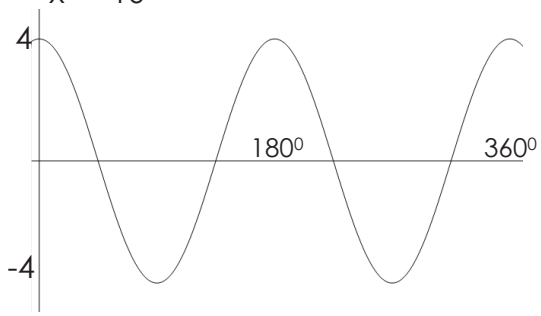
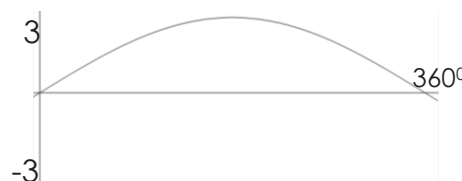
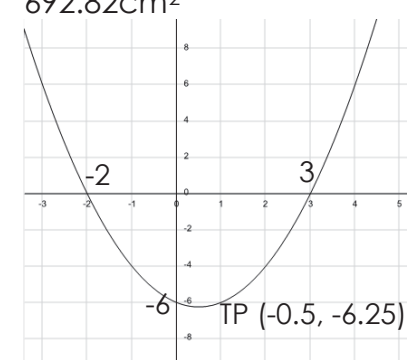


ANSWERS:

If you spot any mistakes in these answers, please let Mr Smith know!

<p>HW1</p> <ol style="list-style-type: none"> $\frac{8}{15}$ $y = 12x - 27$ $m^{-4} = \frac{1}{m^4}$ $n = \sqrt{\frac{kp}{m}}$ $x = 30, 150$ $\bar{x} = 5.8, sd = 2.28$ $2(t - 3)(t + 3)$ £89,388.27 $82^2 = 6724, 80^2 + 18^2 = 6724.$ <p>By converse of Pythagoras, right-angled!</p> <ol style="list-style-type: none"> $x = 5, x = -3$ 	<p>HW2</p> <ol style="list-style-type: none"> 260.3 $y = -\frac{2}{3}x + 8$ $\frac{1}{\sqrt{5}}$ $r = \sqrt{\frac{Py}{3}}$ $x = 11.3, 191.3$ $x = 0.47, x = -2.81$ $3(x + 5)(x - 2)$ 258.46ml $x = 4.5$ $b^2 - 4ac > 0$ so two real (distinct) roots
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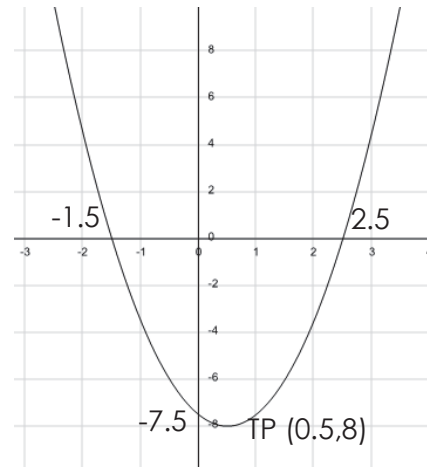
<p>HW3</p> <ol style="list-style-type: none"> $\frac{88}{5} = 17\frac{3}{5}$ $y = 4x - 17$ $a - 2a^{\frac{1}{2}}$ $x = -10$  <ol style="list-style-type: none"> 520cm³ $x^2 + 12x + 15$ £11713.51 3.62m $b^2 - 4ac > 0$ so two real (distinct) roots 	<p>HW4</p> <ol style="list-style-type: none"> 1.6 sub in $x = -2$ and show $y \neq 5$ $\sqrt{5}$ $3x^2 + 11x - 4$  <ol style="list-style-type: none"> $x = 1.79, x = 0.05$ $3(x - 5)(x + 1)$ £4.50 692.82cm²  <ol style="list-style-type: none">
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HW5

1. $f(-2) = -2$
2. Graph C
3. $5\sqrt{2}$
4. $x \geq 18$
5. $x = 26.6$
6. s.d. = 7.37
7. $3x^3 - 14x^2 + 7x + 4$
8. 1,795,728,158
9. $3\sqrt{2}$
10. $b^2 - 4ac < 0$ so no real roots

HW6

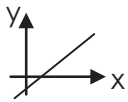
1. $\frac{23}{63}$
2. $a = -2$
3. $3k^3 + 2k^{-2} - k^{\frac{5}{2}} = 3k^3 + \frac{2}{k^2} - \sqrt{k^5}$
4. $W = \frac{1}{5} \left(\frac{4}{L} + J^2 \right)$
5. $a = 5, b = 3$
6. Yes= it holds 502.4ml (2.4ml more)
7. $x = 8, x = -3$
8. £300
9. 107°



HW7

1. 0.571
2. $y = 4x - 3$
3. 9
4. $-\frac{7}{5}$
5. $a = 4$
6. show that s.d. = $\sqrt{3}$. New $\bar{x} = 102, sd = \sqrt{3}$
7. $x^2 - 7x + 3$
8. Cylinder (its volume is $4\pi h$ compared to $3\pi h$)
9. Angle BMP = 57.8°
10. symmetry $x = 6$ and TP (6,2)

HW8

1. £29.58
2. 
3. $\frac{b^3}{a}$
4. $\frac{8a - 3}{a(a - 1)}$
5. $x = 30, 150$
6. $x = 1.1, -1.77$
7. 8
8. 400
9. $\sqrt{29}$
10. $c = 5$

HW9	HW10
1. $\frac{99}{160}$	1. 17 cakes
2. $m = -3$ and $c = 2.5$	2. $y = -2x - 13$
3. $6\sqrt{2}$	3. $1 - p^{\frac{7}{2}}$
4. $h = \frac{2A}{a+b}$	4. $x = 11$
5. P (90,1) and Q (53.1,0)	5. $x = 30, 150, 210, 330$
6. 4M1 have higher marks on average. 4M1 have less consistent marks.	6. $h = 1.2$
7. $2(y - 17)(y + 2)$	7. $x^3 + 6x^2 + 12x + 8$
8. 128mm	8. £127.65
9. 6.64cm	9. 42.66cm
10. $b^2 - 4ac > 0$ so two real (distinct) roots	10. $x = 2$

FORMULAE LIST

The roots of $ax^2 + bx + c = 0$ are $x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$

Sine rule: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine rule: $a^2 = b^2 + c^2 - 2bc \cos A$ or $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$

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

Volume of a sphere: $Volume = \frac{4}{3}\pi r^3$

Volume of a cone: $Volume = \frac{1}{3}\pi r^2 h$

Volume of a pyramid: $Volume = \frac{1}{3}Ah$

Standard deviation: $s = \sqrt{\frac{\sum(x - \bar{x})^2}{n-1}} = \sqrt{\frac{\sum x^2 - (\sum x)^2 / n}{n-1}}$, where n is the sample size.