

Solutions

① $\bar{x} = 84$
 $s = 3.5$

② $AB = 13.09$ (2dp)

③ $18.23m$

④ $2.639kg$

⑤ a) $\frac{L, Q_1, Q_2, Q_3, H}{2, 4, 6, 9, 13}$

b) $2, 3, 5, 5, 7, 8$

c) $65, 67, 71.5, 78, 81$

⑥ a) $10x^2 + 11x - 6$

b) $35x^2 - 29x + 6$

c) $x^2 + 6x + 9$

d) $5x^3 + 13x^2 - 12$

e) $5x^2 + x + 10$

⑦ a) $x(x+7)$

b) $(a+4b)(a-4b)$

c) $(x+6)(x+4)$

d) $(x+7)(x-2)$

e) $(2x+1)(x-7)$

⑧ a) $x=5, y=1$

b) $x=4, y=1$

c) $x=4, y=2$

d) $a=3, b=-4$

⑨ a) Carrots $37p/kg$

Potatoes $25p/kg$

b) $\$7.32$

⑩ a) $z=30$

$x=3.64m$

$y=2.01m$

b) Area = $3.64m^2$
(3sf)

⑪ a) $x=5cm$

b) $y=13.7cm$

c) $z=12.1cm$

⑫ a) 25.38°

b) 66.42°

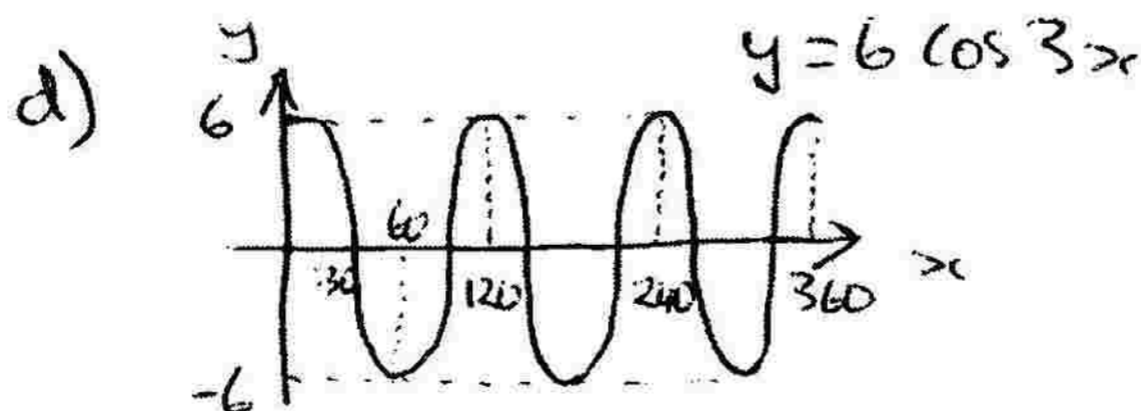
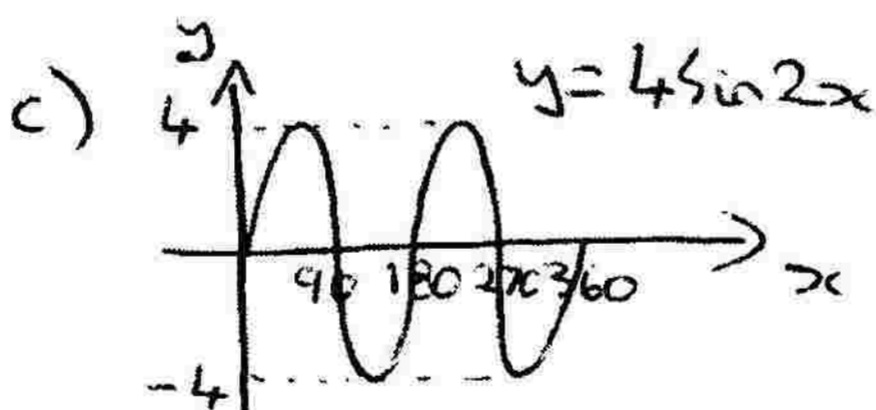
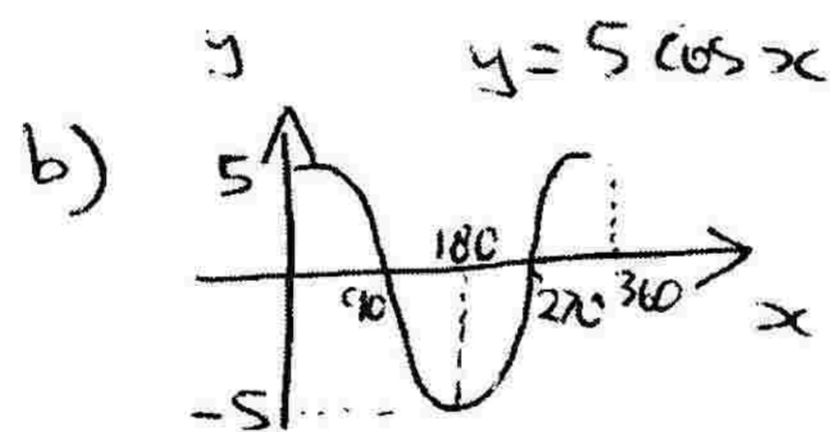
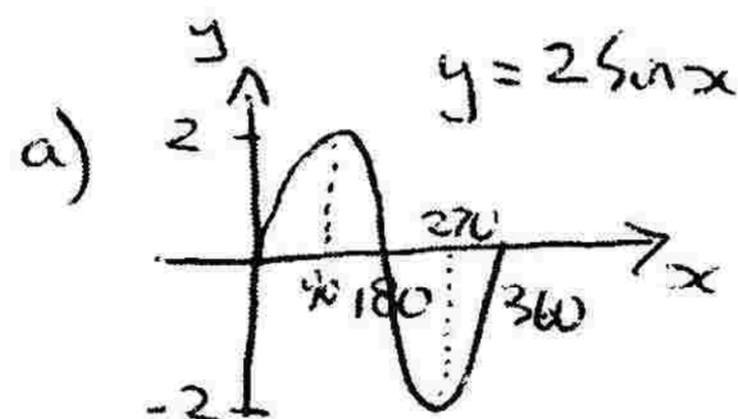
c) 48.81°

⑬ a) $x=5.49$

b) 6.75

(3sf)

⑭



⑮ a) $x=11.5, 168.5$

b) $x=19.5, 160.5$

c) $x=75.5, 284.5$

d) $x=64.6, 295.4$

e) $x=55.1, 304.9$

f) $x=216.9, 323.1$

⑯ a) $5\sqrt{7}$

b) $\frac{2\sqrt{3}}{3}$

⑰ a) $4\sqrt{2}$

b) $5\sqrt{3}$

c) 9

d) 3

e) $8\sqrt{2}$

⑱ a) $x=-3$

b) $(-3, -5)$

⑲ a) b

b) p^2

c) c^2

d) $a^{3/2} - 1$

⑳ a) $\frac{12}{a}$

b) $\frac{4}{b}$

c) $\frac{2b+7a}{ab}$

d) $\frac{12a+10}{a^2+2a}$

e) $\frac{3c+10}{c^2+2c}$

㉑

Goals	Frequency		Cum F
g	f		F
0		12	12
1		9	21
2		9	30
3		4	34
4		1	35
5		1	36
Total	36		

a) 18.5th place - 1 goal

b) 9.5th place - 0 goals

c) 27.5th place - 2 goals

d) Mean 1.3 e) 0 f) $\frac{1}{6}$

(22) a) $y = -\frac{1}{4}x + 6$

b) $y = \frac{1}{2}x - 6$

c) $x = -7$

d) $y = 2x$

e) $y = 3x - 5$

f) $y = 3$

(23) $33.\dot{3}\%$

(24) $\text{f } 114,530$

(25) $\text{f } 7.65$

(26) a) $x = 0.869$
 $x = -1.535$

b) $x = 3.766$
 $x = -0.266$

c) $x = 1.290$
 $x = 0.310$

(27) a) $x = 1.370$
 $x = -1.703$

b) $x = 0.541$
 $x = -5.541$

c) $x = 2.281$
 $x = 0.219$

(28) $x = 49.822^\circ$
Arc AB = 20mm

(29) a) 7606.21 cm^3
b) 2608.92 cm^3
c) 8.54 cm

(30) a) 175 cm^3
b) 87.5 cm^3
c) 2.75 cm

(31)
$$\begin{array}{c|cccccccc} 31 & 1 & 5 & 6 & 9 & & & & \\ a) & 2 & 0 & 2 & 4 & 6 & 7 & 7 & 8 & 8 \\ & 3 & 2 & 2 & 2 & 5 & 6 & 7 & 9 & \\ & 4 & 1 & 6 & & & & & & \end{array}$$

$n = 20$ $1|7$ means 17

b) $Q_1 = 23$

$Q_2 = 28$

$Q_3 = 35.5$

int Q = 12.5
range

(32) a) $x = 6.18$

b) 8.99

(33) a) $y = 82.25^\circ$
 $z = 49.75^\circ$
 $x = 4.62$

b) 10.3

(34) a) $y = -2(x-1)^2 + 18$

b) $x = 1$

c) $B(4,0)$

(35)

	Arc	Sector
a)	9.4cm	56.5cm ²
b)	77.9mm	2415.3mm ²
c)	26.1m	143.6m ²
d)	98.3cm	1131.0cm ²
e)	31.3m	195.7m ²

(36) a) $x = 109.135^\circ$
b) 420 mm^2

(37) a) $x = \frac{y-5}{2}$ e) $p = \frac{d}{6}$ i) $y = \sqrt{x}$ m) $h = \frac{3V}{\pi r^2}$
b) $b = \frac{a+4}{7}$ f) $J = 4h$ j) $m = \sqrt{n-3}$ n) $r = \sqrt{\frac{3V}{\pi h}}$
c) $n = \frac{m-12}{7}$ g) $b = \frac{9}{a}$ k) $n = \sqrt{(m^2-2a)}$
d) $q = \frac{4}{p+8}$ h) $b = \frac{1}{2a}$ l) $a = \sqrt{(h^2-b^2)}$