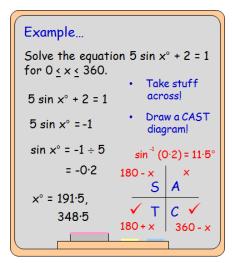
# Outcome 1 - Solving trig equations

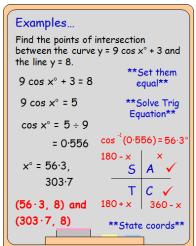
### Bronze example

#### Example... Solve the equation $7 \sin x^{\circ} - 1 = 3$ for $0 \le x \le 360$ . Take stuff across $7 \sin x^{\circ} - 1 = 3$ Draw a CAST $7 \sin x^{\circ} = 4$ diagram! $\sin x^{\circ} = 4 \div 7$ $\sin^{-1}(0.5714...) = 34.8^{\circ}$ = 0.5714... 180 - x **√** 5 $x^{\circ} = 34.8$ T 145.2 180+x 360-x

### Silver example



### Gold example



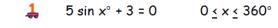
### **Bronze Questions**

Solve the following trig equations...

- $4 5 \tan x^{\circ} 2 = 0 0 x 360^{\circ}$
- $2 6 \cos x^{\circ} 5 = 0 \qquad 0 \le x \le 360^{\circ}$
- $3 \sin x^{\circ} 3 = 2 \quad 0 < x < 360^{\circ}$
- 4 2 tan  $x^{\circ}$  + 7 = 10 0 < x < 360°
- $4 \cos x^{\circ} + 4 = 5 \quad 0 \le x \le 360^{\circ}$

# Silver Questions





- $2 7 \cos x^{\circ} + 2 = 0 \qquad 0 \le x \le 360^{\circ}$
- $30 \sin x^{\circ} + 6 = 1 \qquad 0 \le x \le 360^{\circ}$
- $4 2 \tan x^{\circ} + 3 = 1 0 \le x \le 360^{\circ}$
- $5 = 8 \cos x^{\circ} + 7 = 2 \qquad 0 \le x \le 360^{\circ}$

## Gold Questions

Find the points of intersection between the following curves and lines...

- 4 y=5 cos x° 3 and y=0
- 2 y=9sin x°+1 and y=5
- $\Rightarrow$  y = 6 cos x° + 2 and y = 7
- $4 y = 8 \sin x^{\circ} + 11$  and y = 9
- $5 = y = 7 \cos x^{\circ} + 10$  and y = 4





### Bronze Answers

- 1. 21·8°, 201·8° 2. 33·6°, 326·4°
- 3. 38·7°, 141·3° 4. 56·3°, 236·3°
- 5. 75·5°, 284·5°

### Silver Answers

- 1. 216·9°, 323·1° 2. 106·6°, 253·4°
- 3. 210°,330° 4. 135°,315°
- 5. 128·7°, 231·3°

#### Gold Answers

- 1. (53·1,0) and (306·9,0) 2. (26·4,5) and (153·6,5)
- 3. (33.6, 7) and (326.4, 7) 4. (194.5, 9) and (345.5, 9)
- 5. (149·0,4) and (211·0,4)