



THIRD TERM GLOBAL TEST

2° ESO



Exercise 1: (2 pts) Solve the following second degree equations:

a) $5x^2 - 45 = 0 \rightarrow x = \pm 3$

b) $21x^2 - 7x = 0 \rightarrow x = 0, x = 1/3$

c) $x^2 + x - 20 = 0 \rightarrow x = 4, x = -5$

d) $3x^2 - 13x - 10 = 0 \rightarrow x = 5, x = -2/3$

Exercise 2: (3 pts) Solve the following systems of equations using the indicated method:

a) Substitution

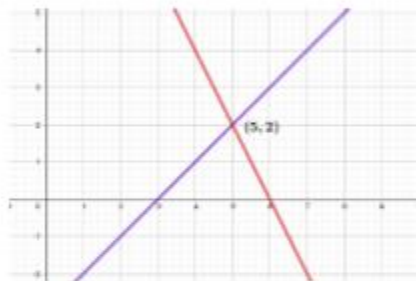
$$\left. \begin{array}{l} 5x - y = 3 \\ 3x + 2y = 7 \end{array} \right\} \begin{array}{l} x = 1 \\ y = 2 \end{array}$$

b) Elimination

$$\left. \begin{array}{l} x - 3y = 4 \\ 3x - 9y = 7 \end{array} \right\} \text{It has no solution}$$

c) Graphically

$$\left. \begin{array}{l} x - y = 3 \\ 2x + y = 12 \end{array} \right\}$$



d) As you prefer

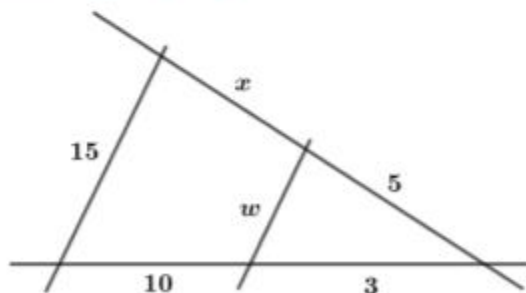
$$\left. \begin{array}{l} 2x + 3y = 1 \\ 5x + 4y = 13 \end{array} \right\} \begin{array}{l} x = 5 \\ y = -3 \end{array}$$

Exercise 3: (1.5 pts) Find the sides of a right-angled triangle knowing that the hypotenuse measures $x+2$ and the other two sides have lengths of x and $x-2$ cm

The sides measure 6 cm, 8 cm and 10 cm

Exercise 4: (1 pto) Solve the equation $\frac{(x-3)^2}{2} = 2x-6 \rightarrow x = 3, x = 7$

Exercise 5: (1.25 pts) Find the value of the unknowns:

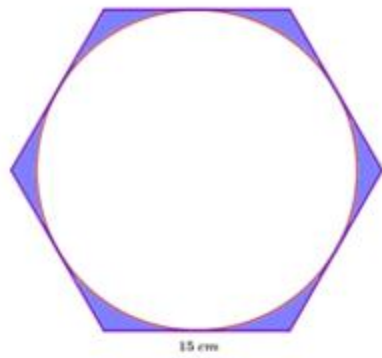


$$x = 16.67$$

$$w = 3.46$$



Exercise 6: (1.25 pts) Find the area of the shadowed region between a regular hexagon with sides of 15 cm and a circle inscribed within



$$A = 54.46 \text{ cm}^2$$

