2. A) $-2(2x-1)+5 = 11-4(x+1)$

$-4x+2+5 = 11-4x-4$

$-4x+7 = 7-4x \quad | +4x-7$

$-4x+4x = 7-7$

$0x = 0$ άπειρα

B) $-2(-3x+3) = 6(4x-9)-7x$

$+6x-6 = 24x-54-7x$

$+6x-6 = 17x-54 \quad | -17x+6$

$-11x = -48$

$x = \frac{48}{11}$

Γ) $4(3-x)-2(3x-4)+9x = -8x-3(1-x)+23$

$12-4x-6x+8+9x = -8x-3+3x+23$

$20-x = -5x+20$

$-x+5x = 20-20$

$4x = 0$

$x = 0$

Δ) $\frac{2x}{5} - \frac{x+1}{3} = \frac{5-y}{10}$ ΕΚΠ = 30

$\overset{6}{\cancel{30}}\frac{2x}{\cancel{5}} - \overset{10}{\cancel{30}}\frac{x+1}{\cancel{3}} = \overset{3}{\cancel{30}}\frac{5-y}{\cancel{10}}$

$6 \cdot 2x - 10(y+1) = 3(5-y)$

$12x - 10y - 10 = 15-3y$

$2y - 10 = 15-3y$

$2y+3y = 15+10$

$5y = 25$

$y = 5$

Ε) $\frac{5x+15}{7} - 3x - 2 = \frac{2-x}{7} - 20$

$7\frac{5x+15}{7} - 7 \cdot 3x - 7 \cdot 2 = 7\frac{2-x}{7} - 7 \cdot 20$

$5x+15-21x-14 = 2-x-140$

$-16x+1 = -x-138$

$-16x+x = -139$

$-15x = -139$

$x = \frac{139}{15}$

5. $E_{ABΓΔ} = x \cdot x = x^2$

$E_{ABEZ} = x \cdot (x+2) = x^2 + 2x$

$E_{ABΓΔ} = E_{ABEZ} - 35$

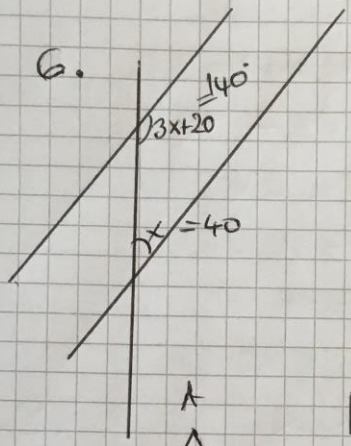
$x^2 = x^2 + 2x - 35$

$x^2 - x^2 - 2x = -35$

$-2x = -35$

$x = 17,5$ cm

6.



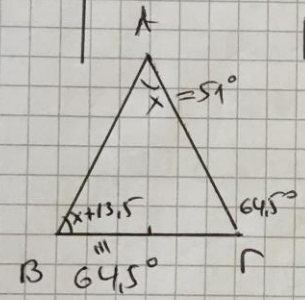
Το αθροισμα των δυο γωνιων ειναι 180°

$3x + 20 + x = 180$

$4x + 20 = 180$

$4x = 160$

$x = 40°$



Ισοσκελες τριγ. ΑΒΓ αρα

$\hat{B} = \hat{\Gamma} = x + 13,5°$

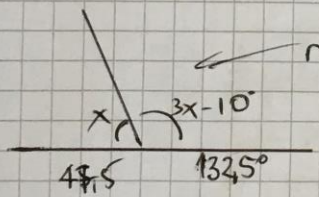
$\hat{A} + \hat{B} + \hat{\Gamma} = 180°$

$x + x + 13,5 + x + 13,5 = 180$

$3x + 27 = 180$

$3x = 153$

$x = 51°$



$x + 3x - 10° = 180$

$4x - 10 = 180$

$4x = 190$

$x = 47,5°$

(1) α) $2x+2 = \frac{5x+1}{4} + x$ Εκτ 4

$4 \cdot 2x + 4 \cdot 2 = 4 \cdot \frac{5x+1}{4} + 4x \rightsquigarrow 8x + 8 = 5x + 1 + 4x \rightsquigarrow 8x + 8 = 9x + 1$

$\rightsquigarrow 8x - 9x = -1 - 8$

$-x = -9$

$x = 9$

$AΔ = BΓ = 10$ cm

$AB = ΔΓ = 20$ cm

b) $Π_Δ = 2 \cdot 20 + 2 \cdot 10 = 60$ cm

$Π_{τετ} = 4 \cdot x \rightsquigarrow 60 = 4 \cdot x \rightsquigarrow x = 15$ cm

c) $E_{ορ} = 20 \cdot 10 = 200$ cm^2 $E_{τετ} = 15^2 = 225$ cm^2

d) Πρεπει να μικρυνθει κατα 5 cm.

ΣΤ) $4-\left(\frac{2x+1}{3}-\frac{x-5}{4}\right)=\frac{x}{3}-\frac{1}{4}\left(2-\frac{3x-1}{3}\right)$

$4-\frac{2x+1}{3}+\frac{x-5}{4}=\frac{x}{3}-\frac{2}{4}+\frac{3x-1}{12}$ ΕΚΠ 12

$12\cdot4-12\frac{2x+1}{3}+12\frac{x-5}{4}=12\frac{x}{3}-12\frac{2}{4}+12\frac{3x-1}{12}$

$48-4(2x+1)+3(x-5)=4x-6+(3x-1)$

$48-8x-4+3x-15=4x-6+3x-1$

$29-5x=7x-7$

$-5x-7x=-7-29$

$-12x=-36$

$x=3$

3. Έστω x ο αριθμός, αν προσθέσω στον αριθμητή του $\frac{3}{2}$ θα έχουμε $\frac{3+x}{2}$, αν προσθέσω στον αριθμητή του δεύτερου θα έχουμε $\frac{7+x}{3}$. Τα δύο κλάσματα θα είναι ίσα

$\frac{3+x}{2}=\frac{7+x}{3}$ ΕΚΠ 6

$\overset{3}{\cancel{6}}\frac{3+x}{\cancel{2}}=\overset{2}{6}\frac{7+x}{3}$

$3(3+x)=2(7+x)$

$9+3x=14+2x$

$3x-2x=14-9$

$x=5$

4. Μαθητής: $x+x-10=50$

Μεγάλος: $x=30$

Μικρός: $x-10=20$

$x+x-10+x+x-10=100$

$4x-20=100$

$4x=120$

$x=30$