

$$1. 32x^4 - 48x^3 - 10x^2 + 21x + 5 = 0$$

Делим на свободный член 5:

$$\pm 1; \pm 5$$

Делим на 32: $\pm 1; \pm 2; \pm 4; \pm 8; \pm 16; \pm 32$

$$p = 5; q = 32$$

$$\frac{p}{q}; \pm 1; \pm \frac{1}{2}; \pm \frac{1}{4}; \pm \frac{1}{8}; \pm \frac{1}{16}; \pm \frac{1}{32}; \pm 5; \pm \frac{5}{4}$$

По схеме Горнера

	32	-48	-10	21	5
1	32	-16	-26	-5	0

$$32x^3 - 16x^2 - 26x - 5 = 0$$

	32	-16	-26	-5
--	----	-----	-----	----

$-\frac{1}{2}$	32	-32	-10	0
----------------	----	-----	-----	---

$$32x^2 - 32x - 10 = 0$$

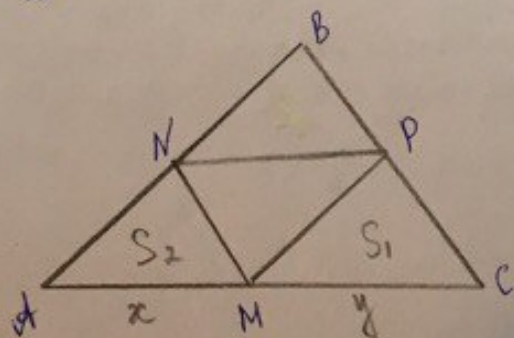
$$16x^2 - 16x - 5 = 0$$

$$D = 256 + 4 \cdot 5 \cdot 16 = 576 = 24^2$$

$$x_1 = \frac{16 - 24}{32} = -\frac{1}{4}; x_2 = \frac{40}{32} = \frac{5}{4}$$

Ответ: $x = 1; x = -\frac{1}{2}; x = -\frac{1}{4}; x = \frac{5}{4}$

2.



Дано: $M \in AC; N \in AB; P \in BC;$

$AB \parallel MP; BC \parallel MN$

$$S_{\triangle ANM} = S_2; S_{\triangle MPC} = S_1$$

Найти: $S_{\triangle NBP}$

Решение:

Пусть $AM = x;$

$MC = y.$

$$\text{Из } \triangle ANM \sim \triangle MPC; \Rightarrow \frac{S_1}{S_2} = \left(\frac{x}{y}\right)^2; \sqrt{\frac{S_1}{S_2}} = \frac{x}{y}$$

$$\text{Из } \triangle MPS \sim \triangle ABC; \Rightarrow \frac{S_2}{S} = \left(\frac{y}{x+y}\right)^2; \sqrt{\frac{S_2}{S}} = \frac{y}{x+y}$$

$$\frac{\sqrt{S_1} + \sqrt{S_2}}{\sqrt{S}} = 1; S = (\sqrt{S_1} + \sqrt{S_2})^2;$$

$$S_{\triangle NBP} = \frac{1}{2} \cdot S_{\triangle MBN} = \frac{1}{2} (S - S_1 - S_2) = \sqrt{S_1 S_2}$$

Ответ: $\sqrt{S_1 S_2}$