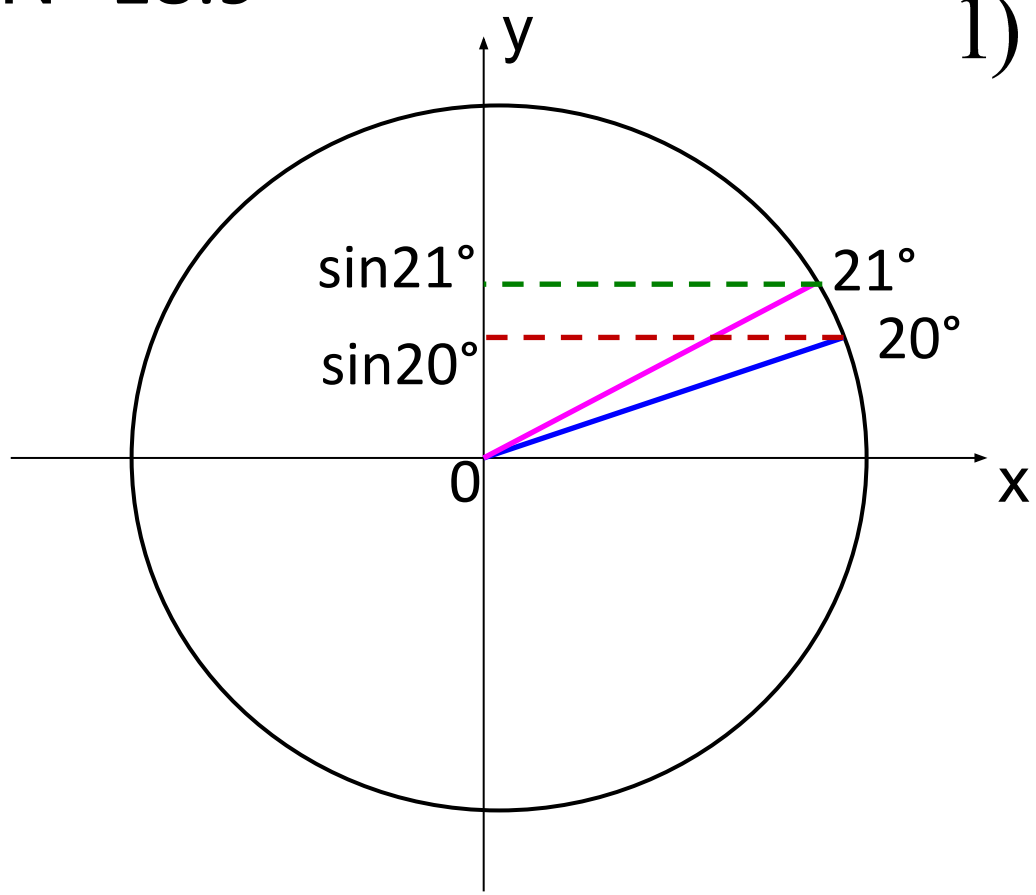
Свойства и графики функций $y=\sin x$ и $y=\cos x$

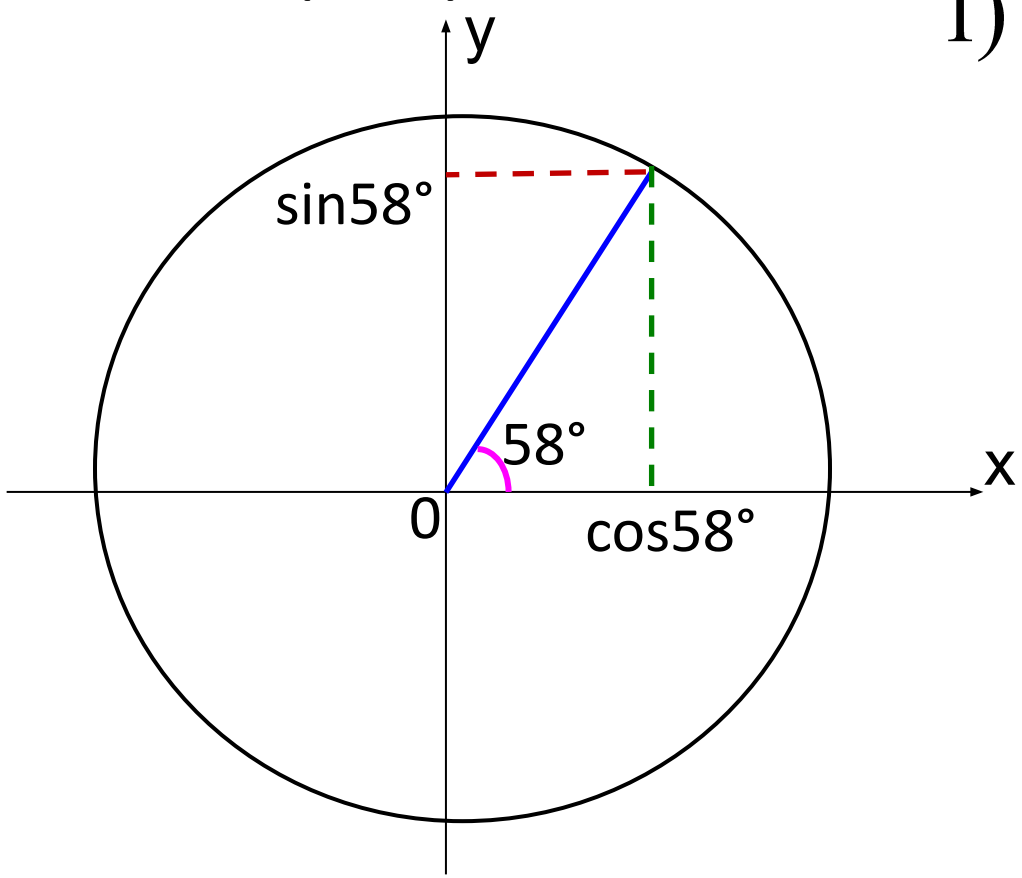
Решение задач

№ 18.9



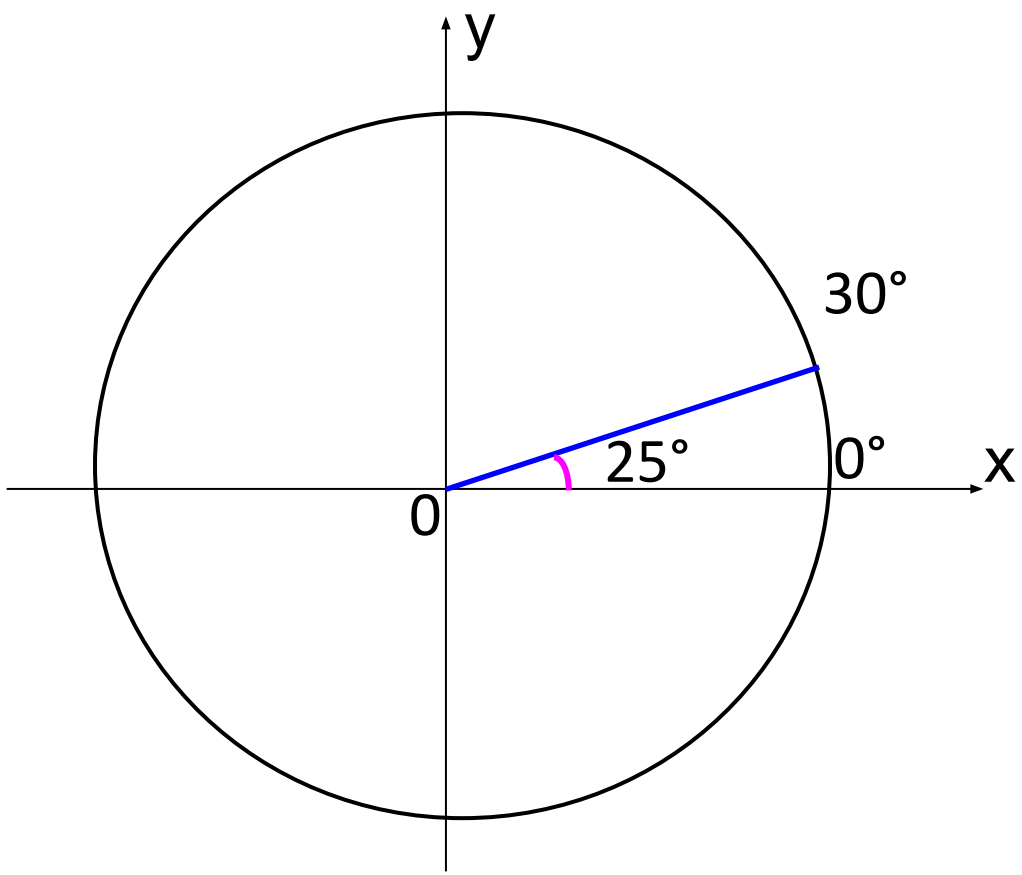
1) $\sin 20° < \sin 21°$

№ 18.11(1, 2)



1) $\sin 58° > \cos 58°$

№ 18.12.



1) $\cos\alpha = 2\sin 25°$ -

ВОЗМОЖНО

$$0° < 25° < 30°$$

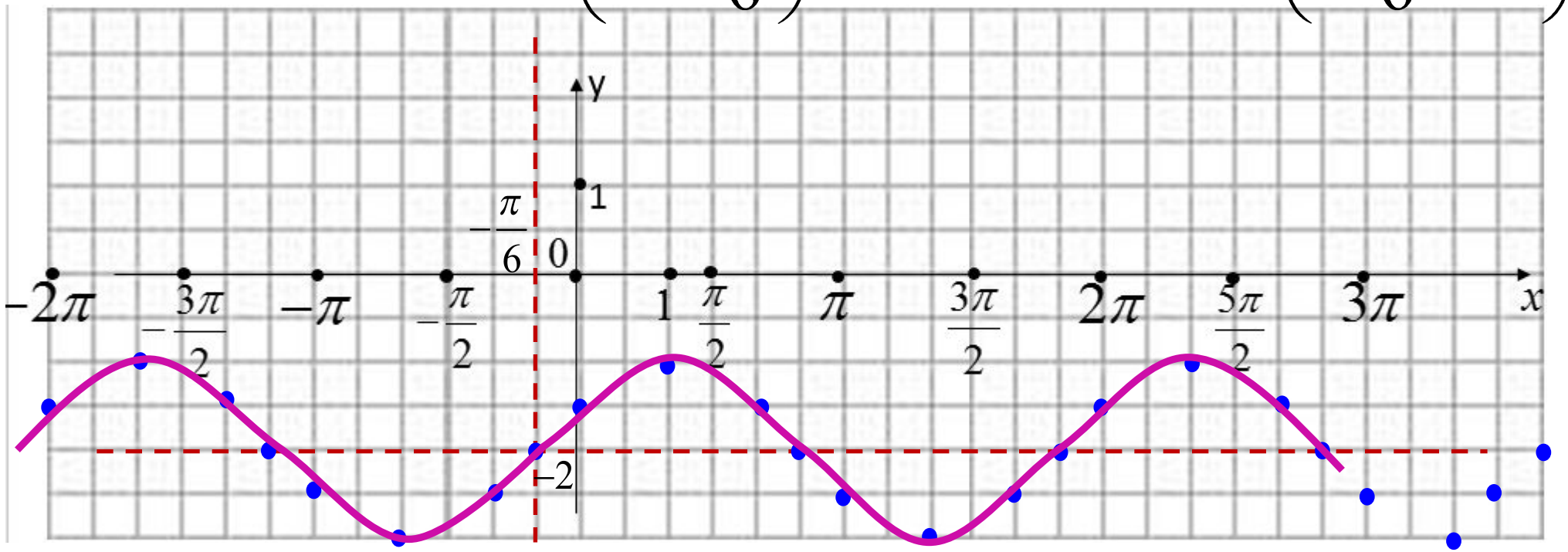
$$\sin 0° < \sin 25° < \sin 30°$$

$$0 < \sin 25° < \frac{1}{2} \quad \Big| \quad \cdot 2$$

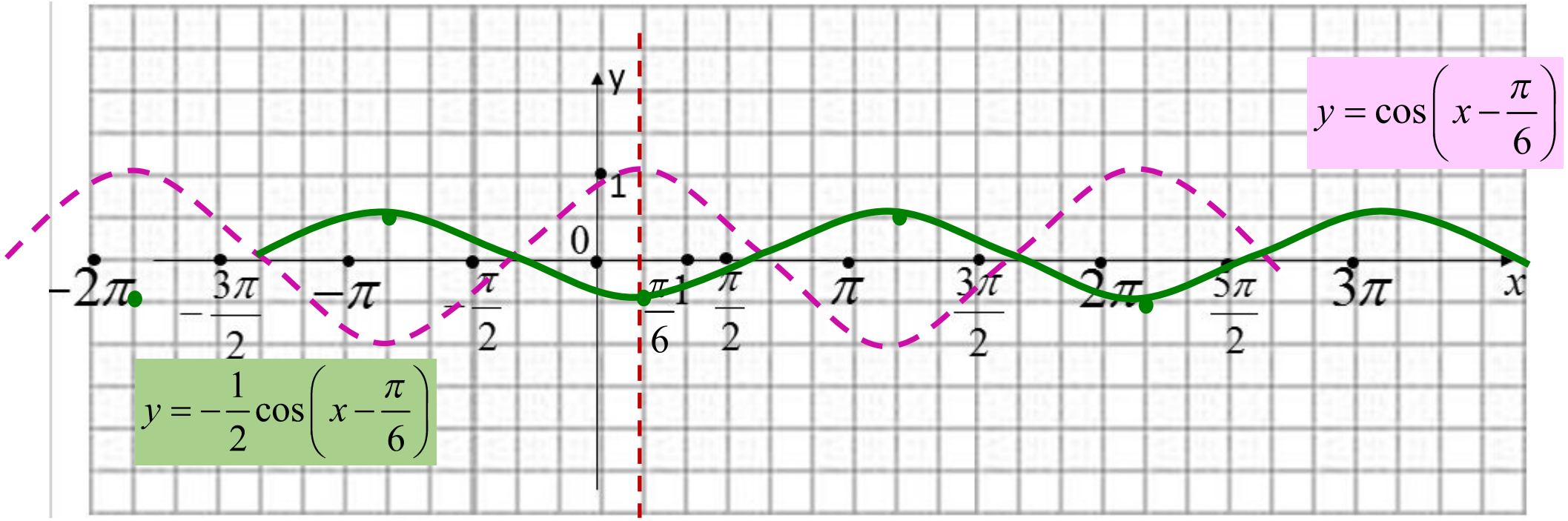
$$0 < 2\sin 25° < 1$$

$$0 < \cos\alpha < 1$$

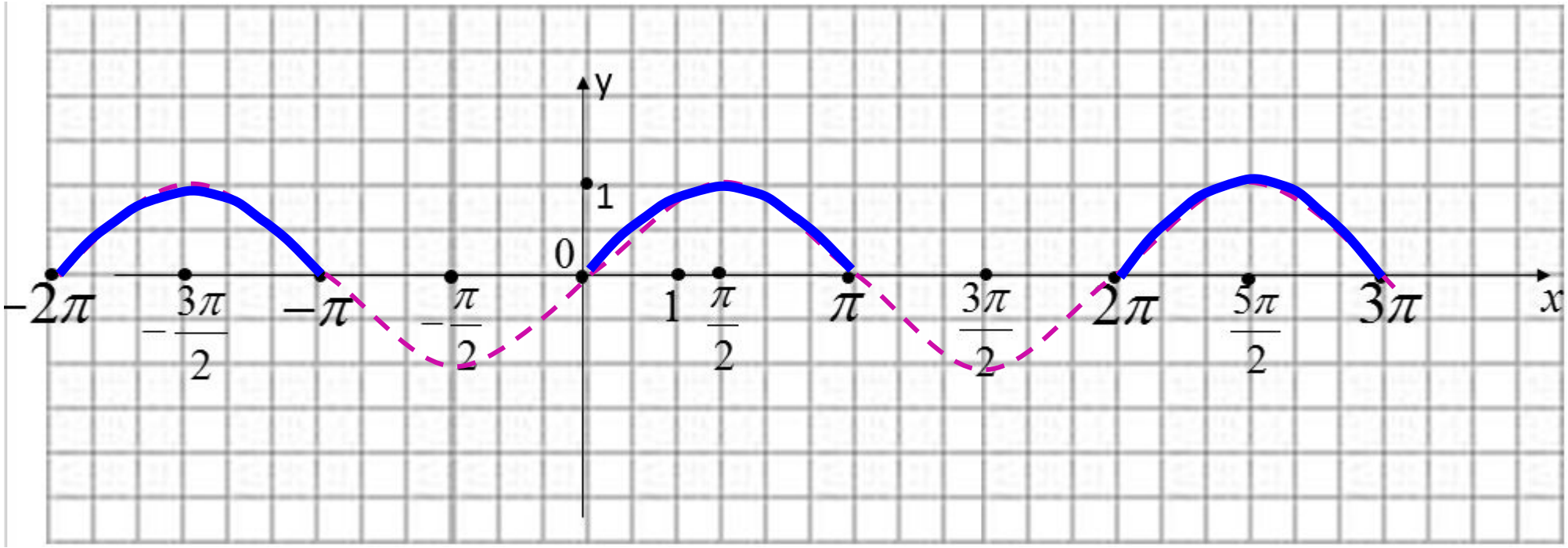
№ 18.13. 1) $y=\sin\left(x+\frac{\pi}{6}\right)-2$ $(0;0)\to\left(-\frac{\pi}{6};-2\right)$



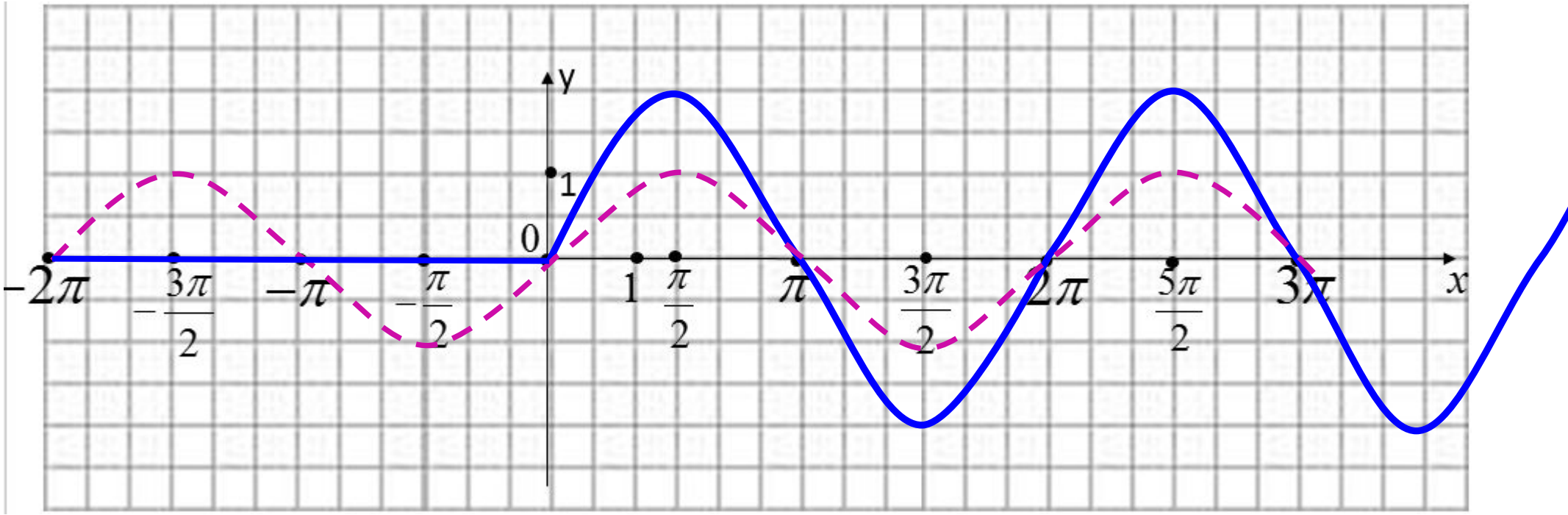
2) $y = -\frac{1}{2}\cos\left(x - \frac{\pi}{6}\right)$



№ 18.15 .



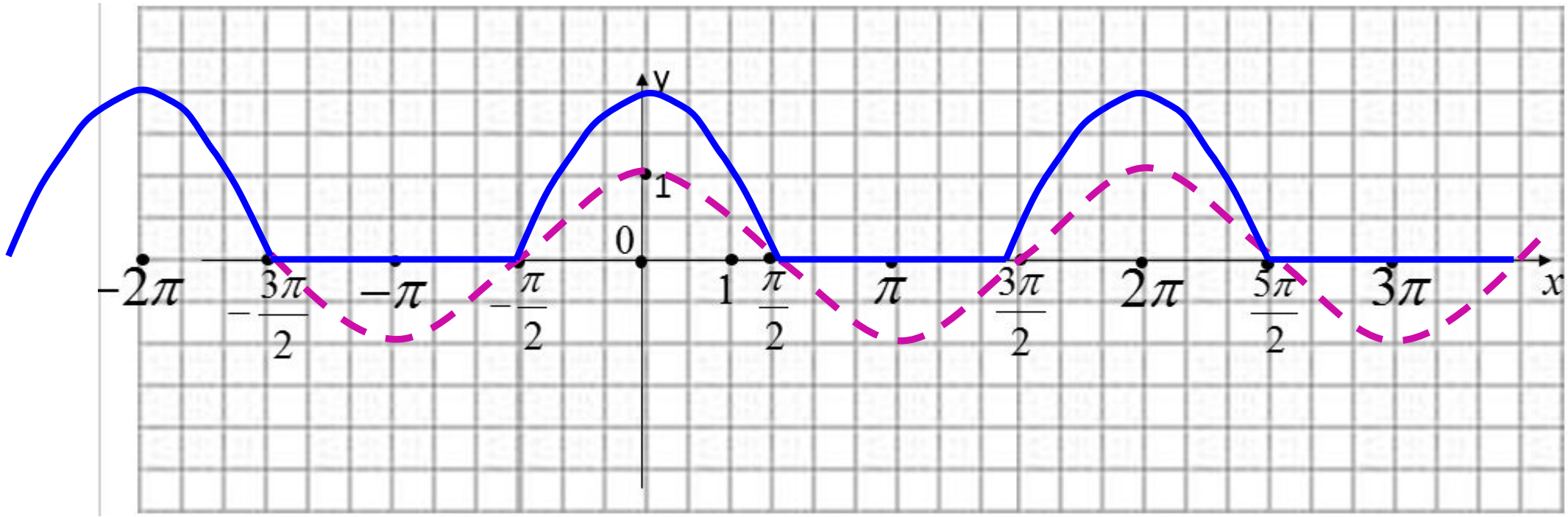
1) $y = \left(\sqrt{\sin x}\right)^2 = \sin x$ $\qquad\qquad$ $\sin x \geq 0$



2) $y = \sin x + \sin|x|$

$x \geq 0$ $\quad y = \sin x + \sin x = 2\sin x$

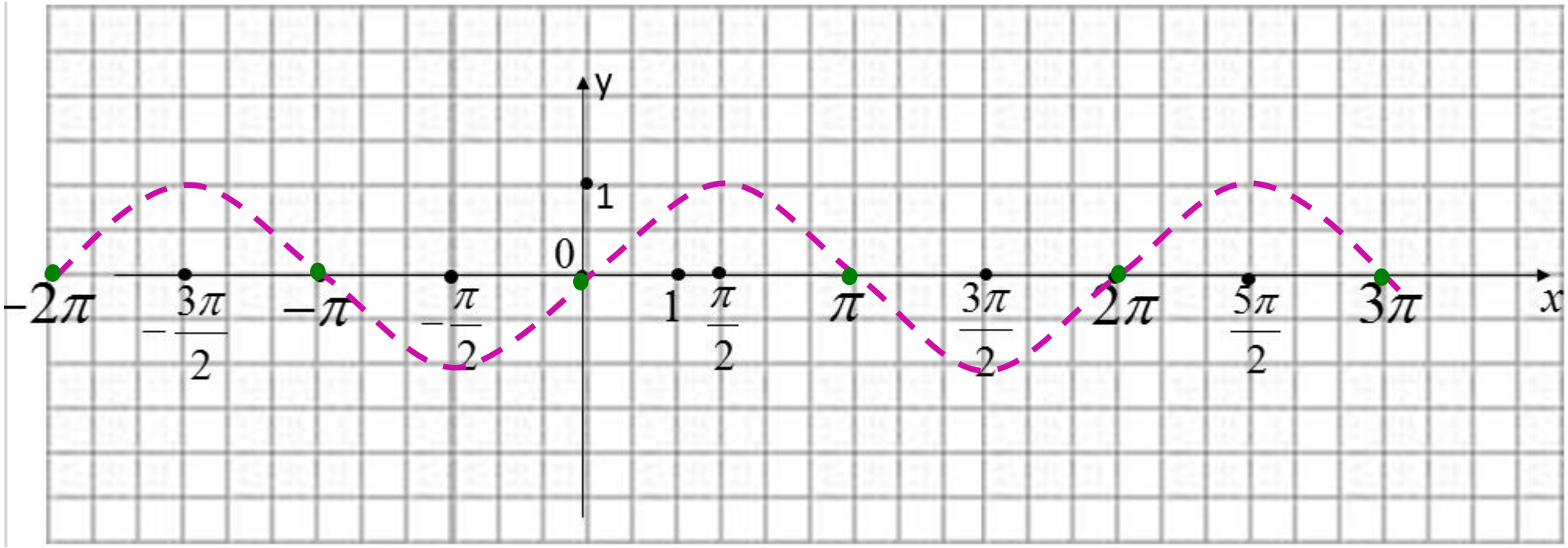
$x < 0$ $\quad y = \sin x + \sin(-x) = \sin x - \sin x = 0$



3) $y = \cos x + \sqrt{\cos^2 x} = \cos x + |\cos x|$

$\cos x \geq 0 \qquad y = \cos x + \cos x = 2\cos x$

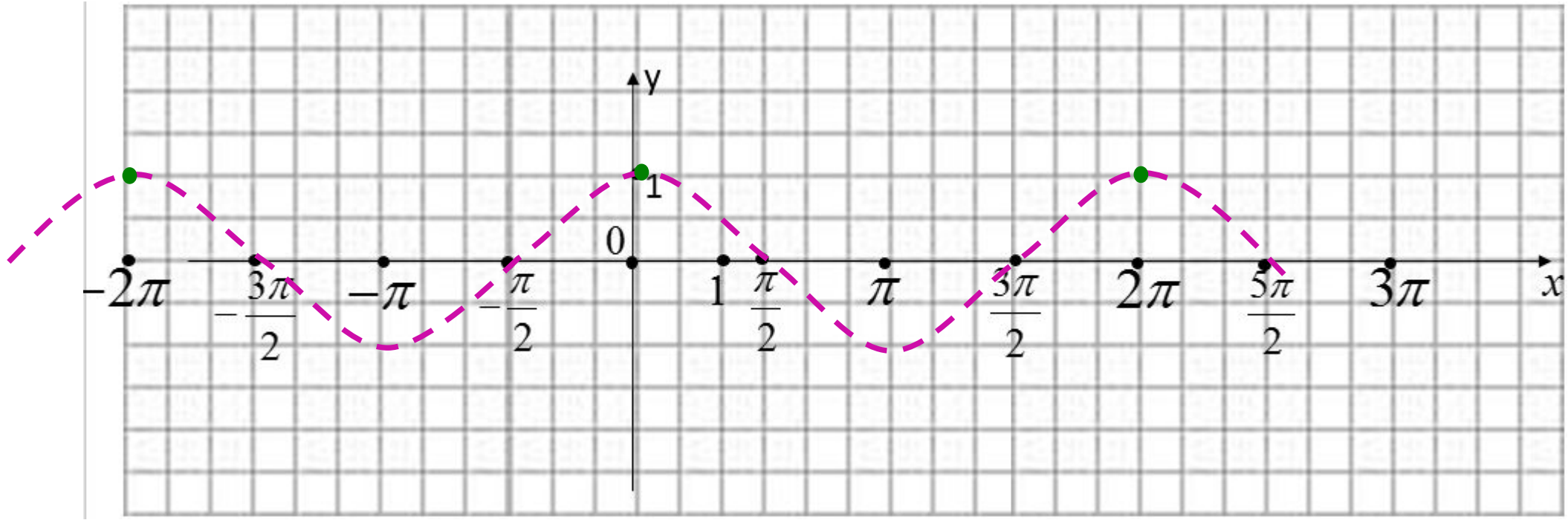
$\cos x < 0 \qquad y = \cos x - \cos x = 0$



4) $y = \sqrt{-\sin^2 x}$

$\sin x = 0, \qquad x = \pi k, \; k \in Z$

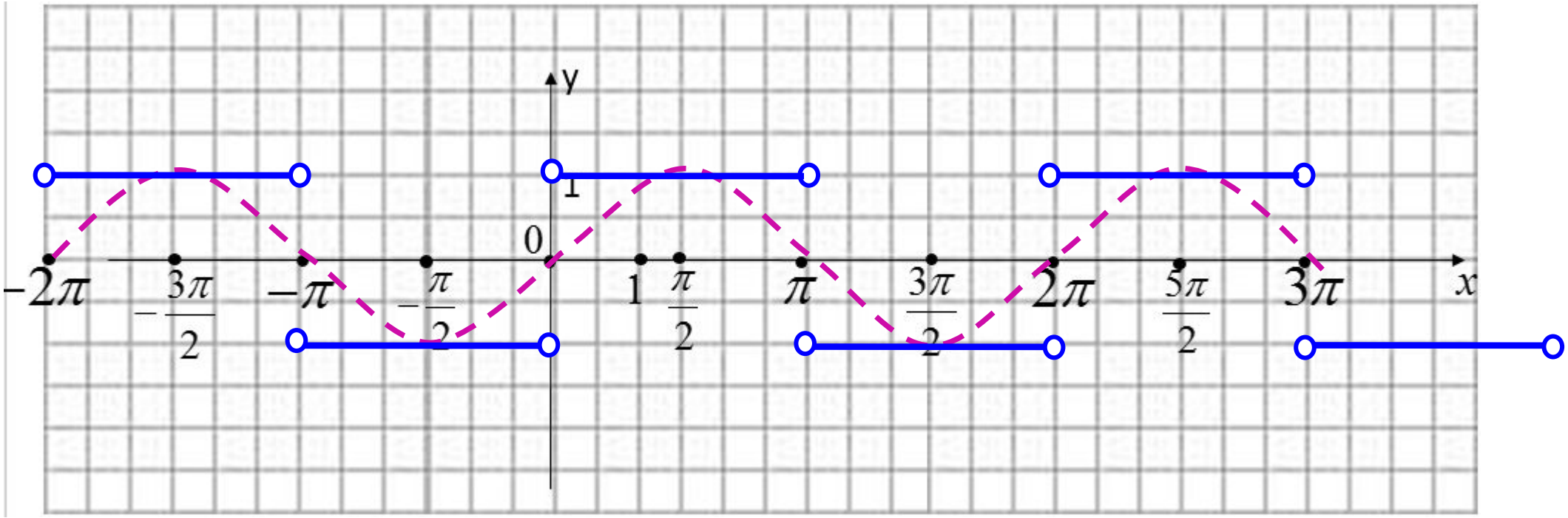
$x = 0 + \pi k, \; k \in Z$



5) $y = \sqrt{\cos x - 1}$ $\quad -1 < \cos x < 1$ $\quad y = 0$?

$\cos x = 1, \quad x = 0 + 2\pi k, \quad k \in Z$

$x = 2\pi k, \quad k \in Z$



6) $y = \dfrac{\sin x}{|\sin x|}$

$\sin x \neq 0$

$x \neq 0 + \pi k, \ k \in Z$

1) $\sin x > 0$ $\quad y = \dfrac{\sin x}{|\sin x|} = \dfrac{\sin x}{\sin x} = 1$

2) $\sin x < 0$ $\quad y = \dfrac{\sin x}{|\sin x|} = \dfrac{\sin x}{-\sin x} = -1$

На повторение

№ 18.22(2)

$$\left(\frac{7^{\frac{9}{4}}\cdot 3^{\frac{7}{4}}}{3^{\frac{1}{4}}\cdot 7^{\frac{3}{4}}}\right)^{\frac{2}{3}} = \left(7^{\frac{3}{2}}\cdot 3^{\frac{3}{2}}\right)^{\frac{2}{3}} = \left((7\cdot 3)^{\frac{3}{2}}\right)^{\frac{2}{3}} = 21$$

Подготовка к ЕГЭ

Площадь треугольника ABC равна 18, DE — средняя линия, параллельная стороне AB. Найдите площадь трапеции $ABED$.