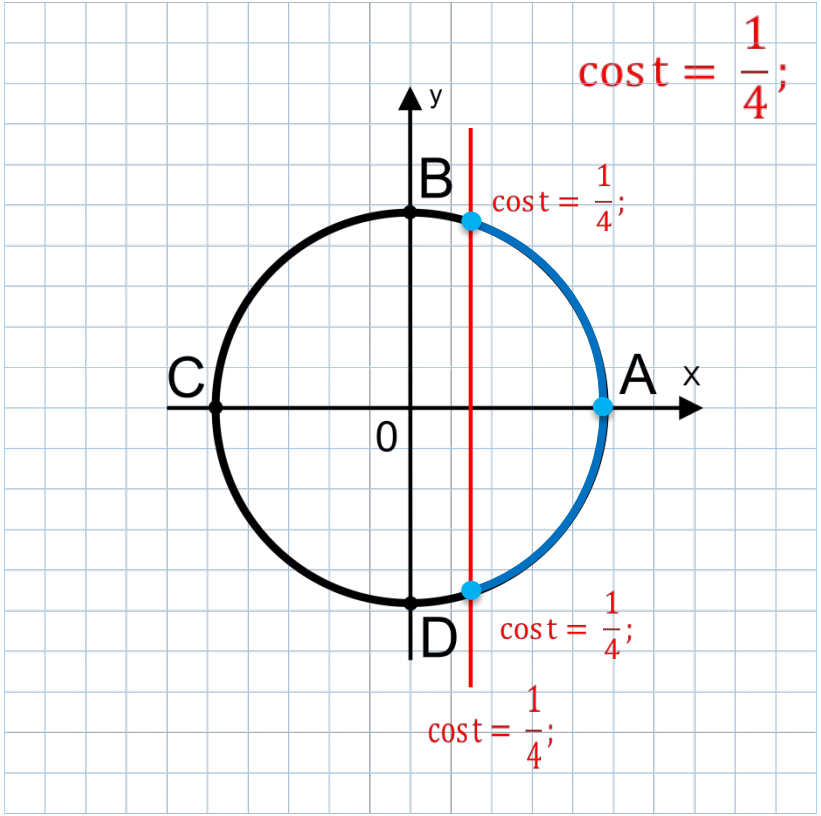
ТРИГОНОМЕТРИЧЕСКИЕ УРАВНЕНИЯ

УРАВНЕНИЕ COS X=A

ПОСМОТРИТЕ ВИДЕОУРОК

ОПОРНЫЙ КОНСПЕКТ

arccos



$\cos t = \frac{1}{4};$

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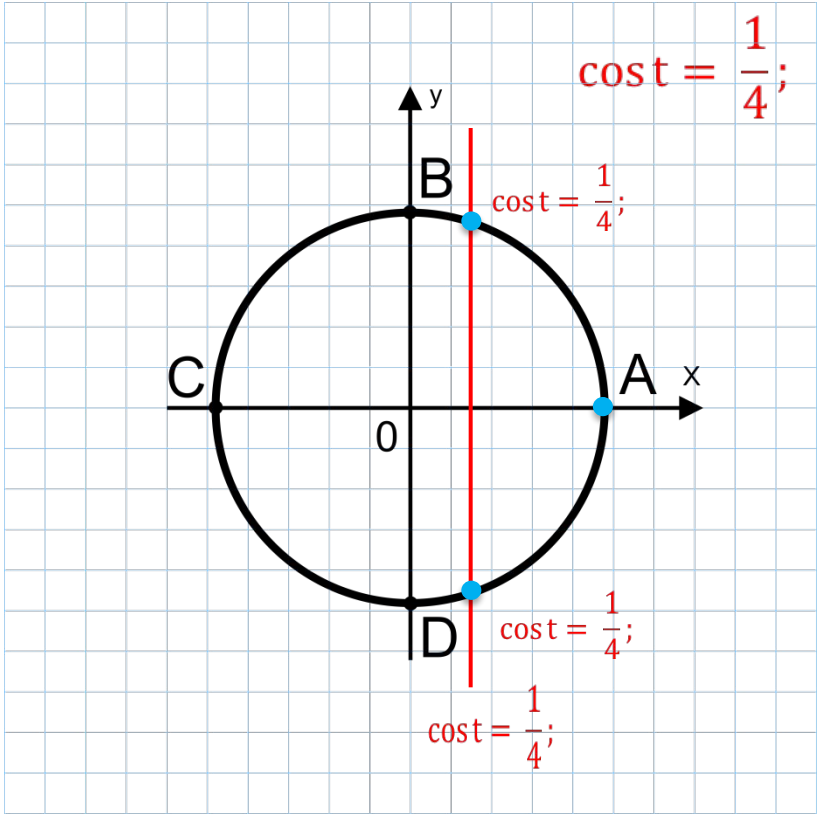
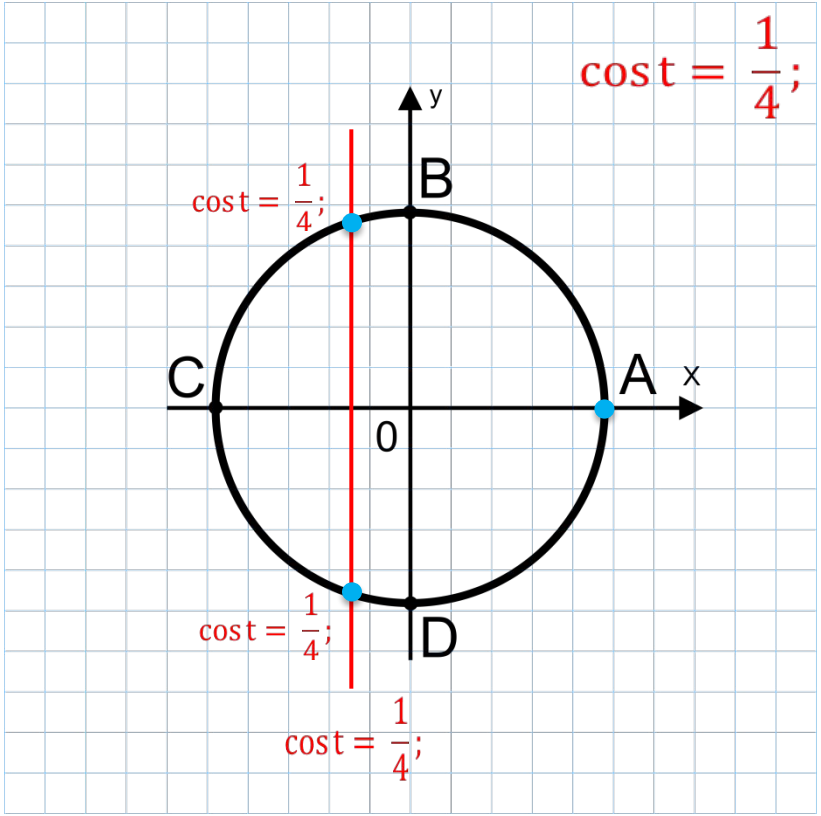


$$cost = \frac{1}{4};$$

$$\cos t = \frac{1}{4};$$



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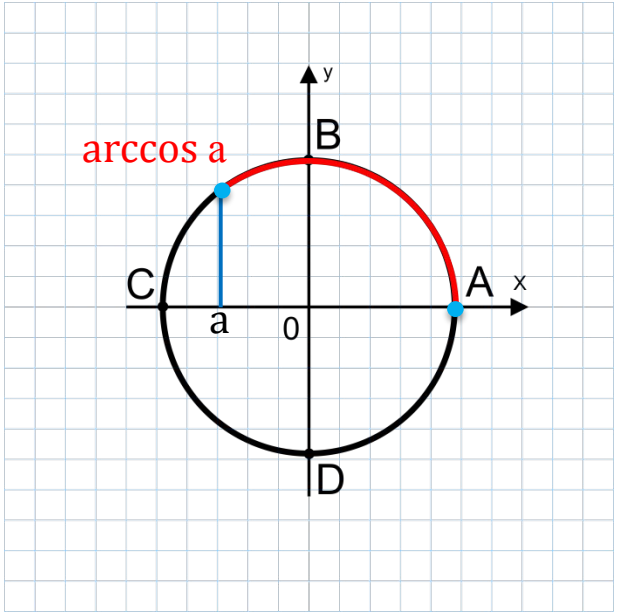
$$\cos t = \frac{1}{4};$$



$$\cos t = a;$$

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$\cos t = 1$: $t = 2\pi k$;

$\cos t = -1$: $t = \pi + 2\pi k$;

$\cos t = 0$: $t = + \pi k$;

$$\cos t = \frac{1}{4};$$

Решение.

$$\cos t = \frac{1}{4}; \Rightarrow \cos t = \frac{1}{4};$$

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t	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{2\pi}{3}$	$\frac{5\pi}{6}$	$\frac{5\pi}{3}$	$\frac{11\pi}{6}$
cos t	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$-\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$

$$\cos t = \frac{1}{4};$$ ■

угол t

arccos t

t	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{2\pi}{3}$	$\frac{5\pi}{6}$
cos t	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$-\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$

число, которому равен cos t

число a, от которого находится arccos t

$$\cos t = \frac{1}{4};$$

Решение.

$$\cos t = \frac{1}{4}; \Rightarrow \quad \cos t = \frac{1}{4};$$

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t	$\frac{\pi}{6}$	$\frac{\pi}{3}$	$\frac{2\pi}{3}$	$\frac{5\pi}{6}$	$\frac{5\pi}{3}$	$\frac{11\pi}{6}$
cos t	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$-\frac{1}{2}$	$-\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$

$$\cos t = \frac{1}{4}; \quad \blacksquare$$

Теорема.

$$\cos t = a;$$

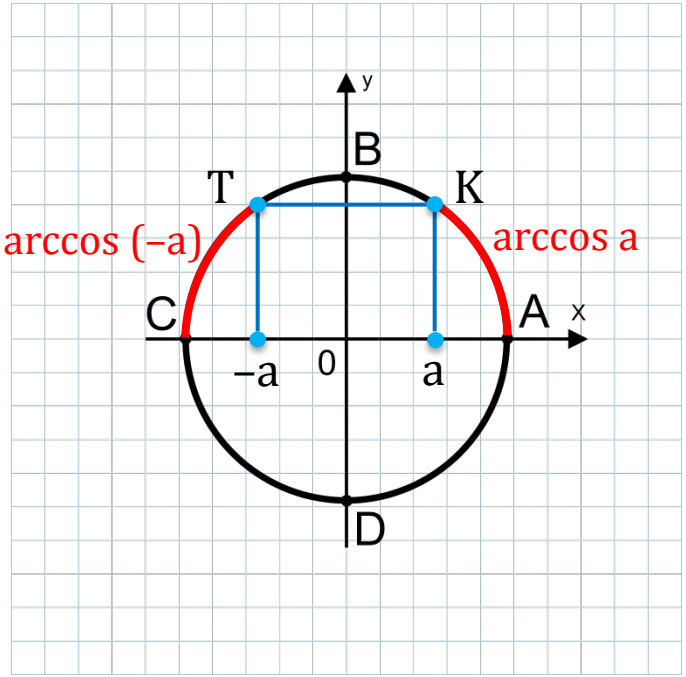
Доказательство.

$a > 0; \Rightarrow -a < 0;$

АК =

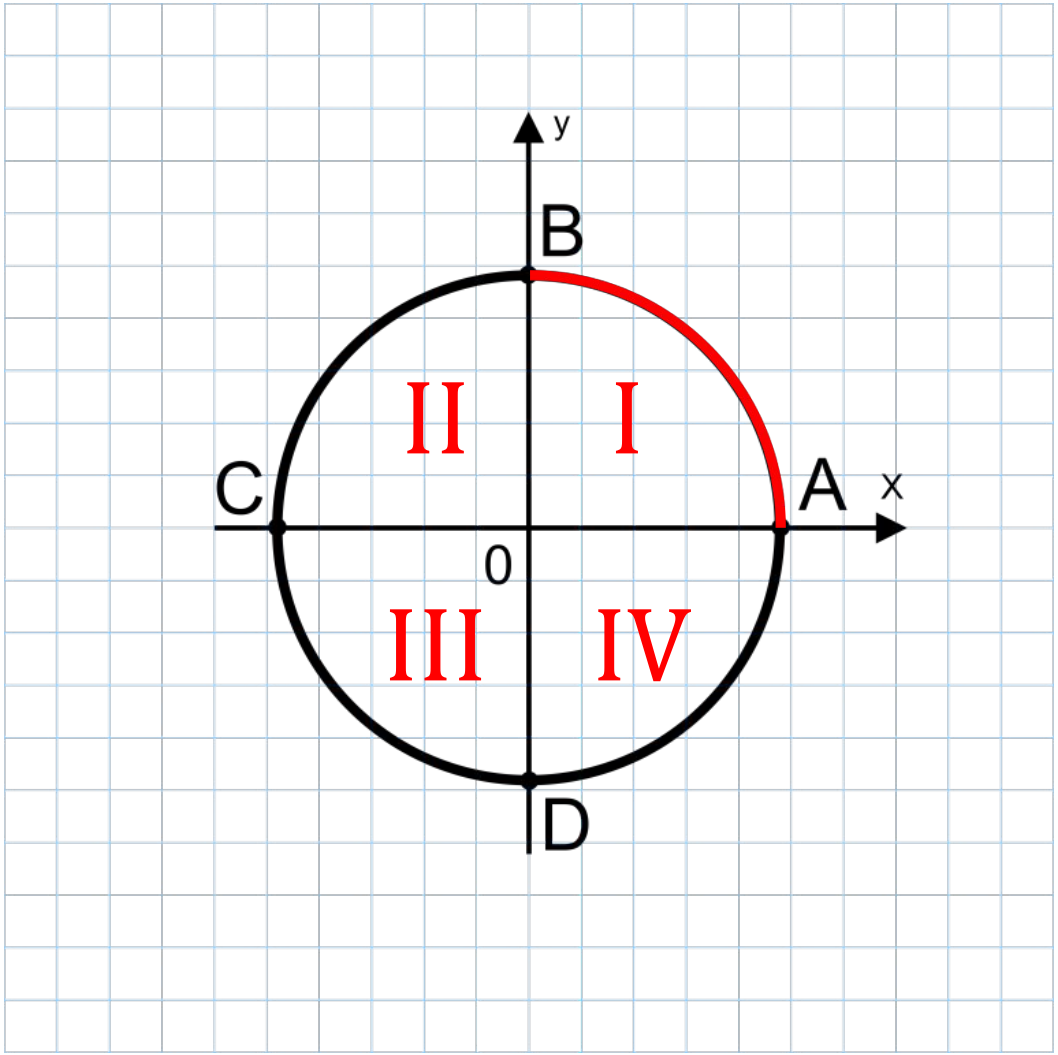
СТ;

$\arccos a + \arccos(-a) = AK + AT = TC + AT = \pi.$

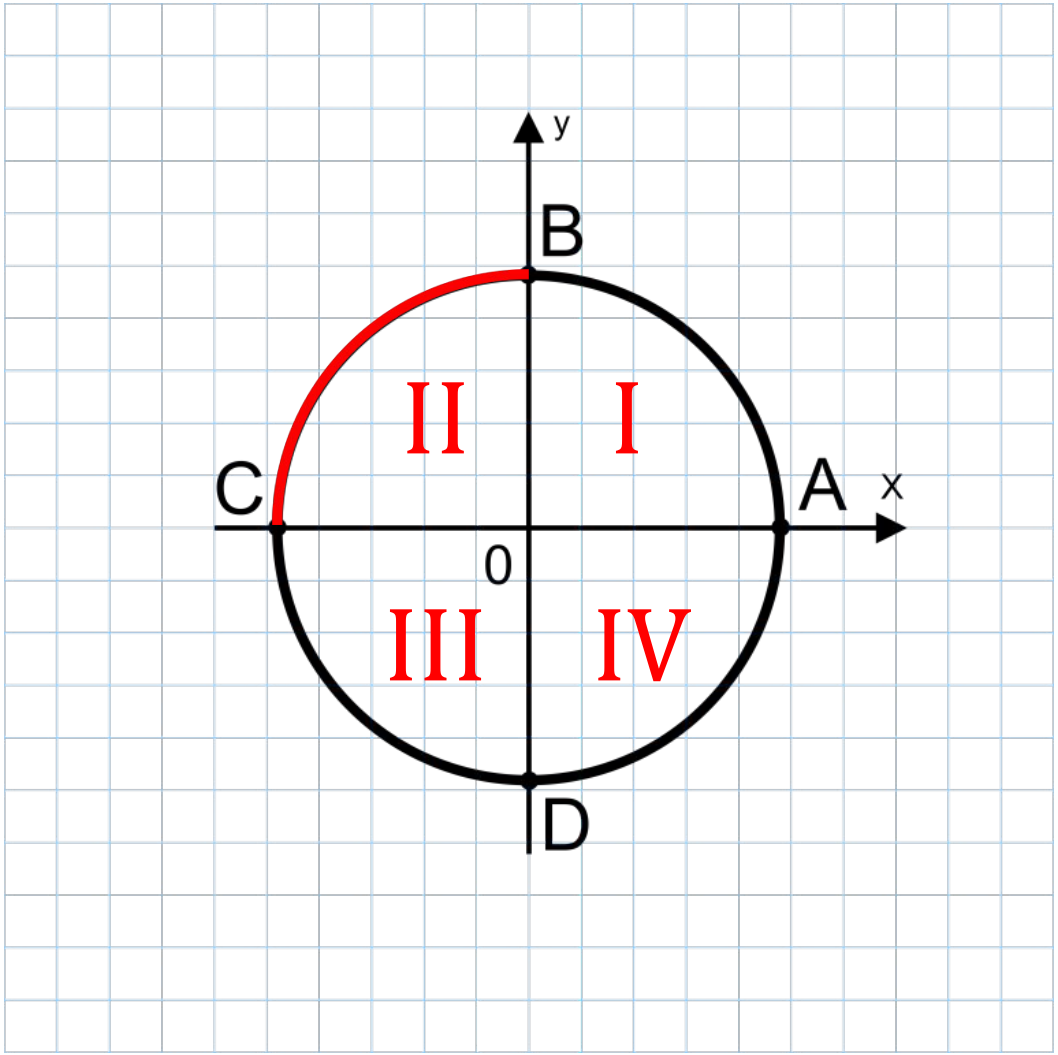


$$cost = \frac{1}{4};$$

$a > 0;$



$a < 0;$



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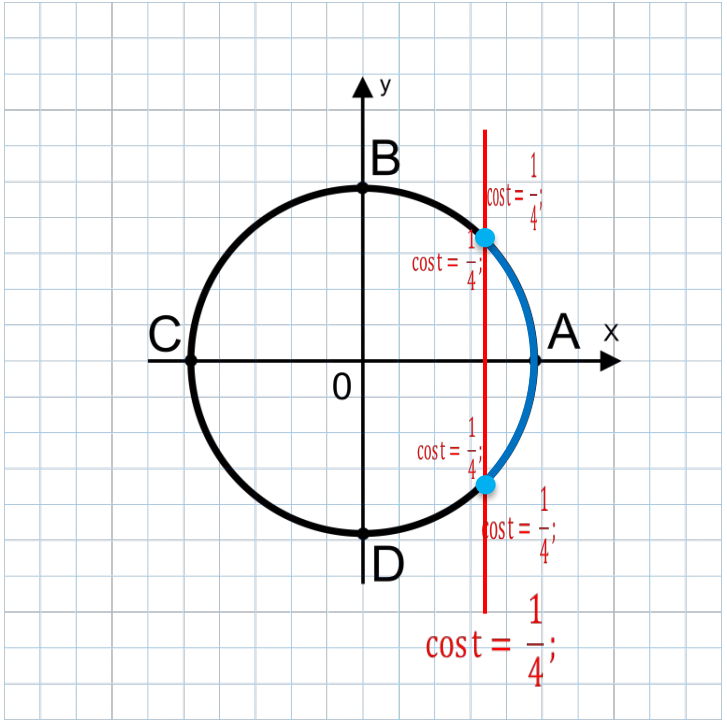

ВЫПОЛНИ:

Для закрепления:

№568

№569

№ 570

№ 571

№572

Задания, решение которых надо выслать до 12.05.2020 г.

1) Вычислите:

1) $arccos\left(-\frac{1}{2}\right) - arccos\frac{1}{2} + arcos\ 0$

2) $arccos\left(sin\frac{\pi}{3}\right)$

3) $sin(arccos\ 1)$

2) Решите уравнения

1) $cos\ 3\,x = 0$

2) $\cos\frac{x}{2} = -\frac{\sqrt{3}}{2}$

3) $\cos 2x = \frac{1}{2}$

4) $\cos(\frac{x}{3} + \frac{\pi}{4}) = -\frac{\sqrt{2}}{2}$

5) $cos\ (x - \frac{\pi}{6}) = -1$

3) Решите уравнение, выполняя замену переменных $2cos^2 x - 5cosx - 7$

4) Решите уравнение, применяя формулы сокращенного умножения

$$cos^2 x - \frac{1}{2} = 0$$