① Find $\log_7 46 = \frac{\log 46}{\log 7} \approx 1.9675$

$\log_b a = \frac{\log a}{\log b}$

② Solve: $2(3x - 7y = -11)$ $6x - 14y = -22$

$7(5x + 2y = 9)$ $35x + 14y = 63$

$5(1) + 2y = 9$ $\frac{41x}{41} = \frac{41}{41}$

$5 + 2y = 9$ $x = 1$

$-5 \quad -5$

$\frac{2y}{2} = \frac{4}{2}$ $(1, 2)$

$y = 2$

③ Solve $27^x = 3^{x-4}$

$(3^3)^x = 3^{x-4}$

$3^{3x} = 3^{x-4}$

$3x = x - 4$

$-x \quad -x$

$\frac{2x}{2} = \frac{-4}{2}$

$x = -2$

④ Solve $e^{5x} = 42 \longleftrightarrow \log_e 42 = 5x$

$\frac{\ln 42}{5} = \frac{5x}{5}$

$x = \frac{\ln 42}{5}$

$x \approx 0.7475$

Note: $\log_3 7 - \log_3 5$

$\log_3 \frac{7}{5}$

$3 \log_2 4x \Leftrightarrow \log_2 (4x)^3$

95% confidence: $1.96 \cdot \frac{\sigma}{\sqrt{n}}$ ✓

2-4
3-4
4-4
5-4
6-4

$20 \div 5 = 4$

$(-2)^2 = 4$
$(-1)^2 = 1$
$0^2 = 0$
$1^2 = 1$
$2^2 = 4$

$10 \div 5$
2

$\sigma = \sqrt{\frac{(x-\mu)^2}{n}}$

$\sigma = 2$

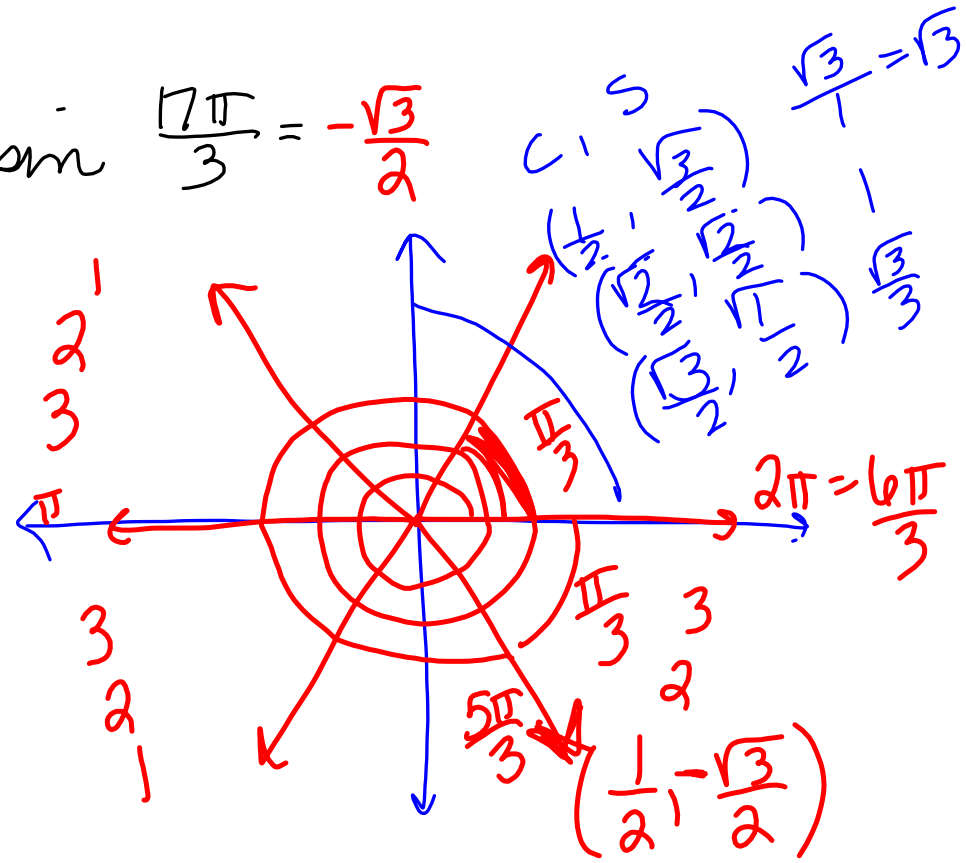
$1.96 \cdot \frac{2}{\sqrt{5}}$

1.753

(5) Change to radians

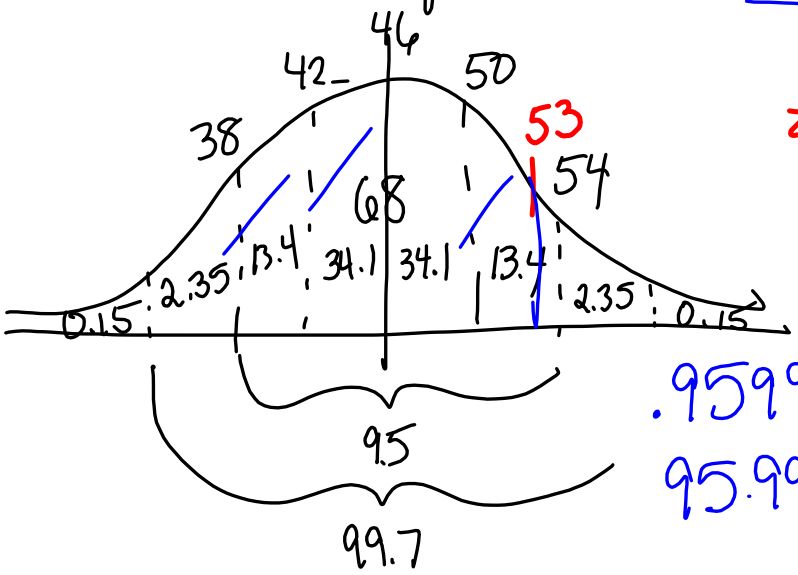
$$170^\circ \cdot \frac{\pi}{180^\circ} = \frac{17\pi}{18}$$

(6) $\sin \frac{17\pi}{3} = -\frac{\sqrt{3}}{2}$



(7) mean 46 data 53
sd. 4

What % of data is less than 53?



$z = \frac{x-\mu}{\sigma}$

$\frac{53-46}{4}$

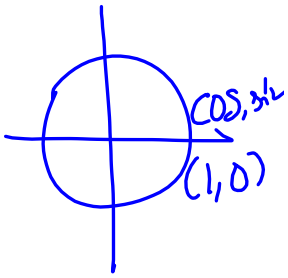
$\frac{7}{4} = 1.75$

.9599

95.99%

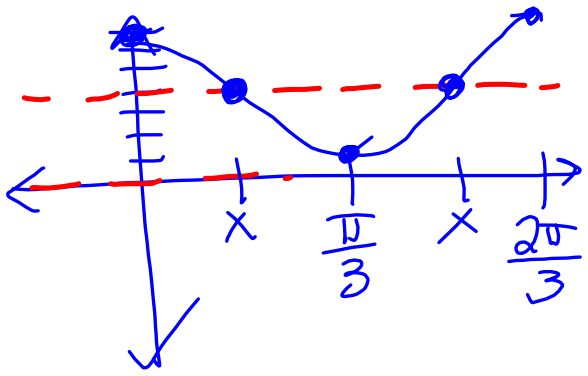
(8) Find the period and amplitude:

$y = 3\cos 3x + 4$

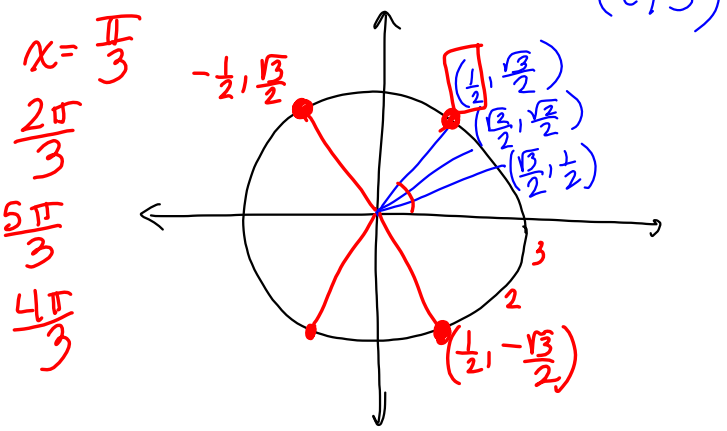


$a = 3$

$p = \frac{2\pi}{b} \rightarrow \boxed{\frac{2\pi}{3}}$



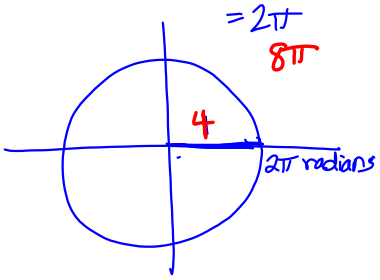
(9) all values for x, such that $|\cos x| = \frac{1}{2}$ $0 \le x \le 2\pi$



(10) Arc length on unit circle $\theta = \frac{16\pi}{17}$

$s = \theta r$ $\frac{16\pi}{17} \cdot 4$

$C = 2\pi \cdot 4$
$= 2\pi$
8π



(11) *asymptotes $f(x) = \frac{3x}{x^2 - 9} = 0$

x, y-ints

0 0

$(x+3)(x-3)$

$x \neq 3, -3$

Degree

$\frac{b}{s}$ = No H.A.

$\frac{s}{b}$ = $y = 0$

$\frac{\text{equal}}{\text{equal}}$ $y = \frac{c}{C}$

V.A: $x = 3$, $x = -3$

H.A: $y = 0$

$y = \frac{x^2 + 4x + 3}{x^2 - 9}$

$\frac{(x+1)(x+3)}{(x-3)(x+3)}$

V.A. : $x = 3$

Hole : $x = -3$

H.A. : $y = 1$