09-16-25 MTH 111

Office hour problems

3.24×0.08

0.2592

$$0.08\overline{)3.24.0} \quad 40.5$$

2 places

32

40

40

0

$$\frac{3.24}{0.08} = \frac{3.24}{0.08}\left(\frac{100}{100}\right)$$

$$= \frac{324}{8}$$

Check: $(0.08)(40.5)$

$= 3.240$ ✓

$9.03 \div 49$, round to nearest hundredth

$.18\frac{11}{49} \approx \boxed{0.18}$

$$49\overline{)9.03}$$

49

413

392

11

9.03/49=0.1843

Check: 0.1843*49=9.0307

Now, we know that OneNote gave an approximate answer.

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$0.031\overline{)610.800}$

3 places

$$31\overline{)610800.0}$$

$19703.2\frac{8}{31}$ round to nearest tenth

$\frac{8}{31} < \frac{1}{2}$

$$\boxed{19703.2}$$

31
300
279
218
217
100
93
70
62
8

$3^2 = 9 \iff 3 = \sqrt{9}$

equivalent

$\sqrt{ab} = \sqrt{a}\sqrt{b}$

simplify square root by finding perfect square factors

$\sqrt{18} = \sqrt{9 \cdot 2} = \sqrt{9}\sqrt{2}$

$= \boxed{3\sqrt{2}}$

Find integer n such that

$n < \sqrt{18} < n+1$

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$2^2 = 4 < 18$

$3^2 = 9 < 18$

$4^2 = 16 < 18$

$5^2 = 25 > 18$

$\Rightarrow$ Implies $4^2 = 16 < 18 < 25 = 5^2$

$\Rightarrow 4 < \sqrt{18} < 5$

Calculator check: sqrt(18)=4.242640687119284

$4 < 4.24 < 5$

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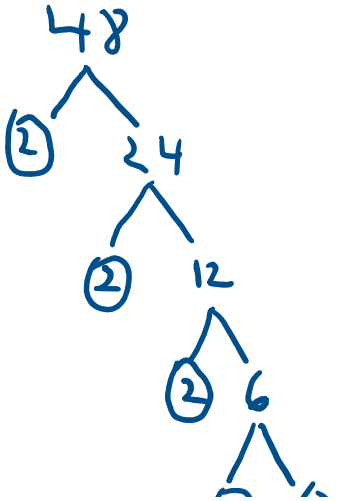
simplify $\sqrt{48}$ and find integer n such that $n < \sqrt{48} < n+1$

$6^2 = 36 < 48$

$7^2 = 49 > 48$

$\therefore \boxed{6 < \sqrt{48} < 7}$



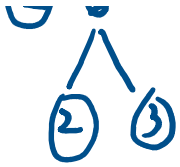
$48 = 2^4 \cdot 3$

$48 = (2^2)(2^2) \cdot 3$

$\sqrt{48} = \sqrt{4 \cdot 4}\ \sqrt{3}$

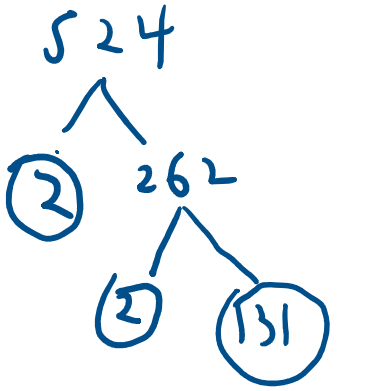
$\sqrt{48} = \sqrt{4^2}\ \sqrt{3}$

$\boxed{\sqrt{48} = 4\sqrt{3}}$



$\sqrt{48} = 4\sqrt{3}$

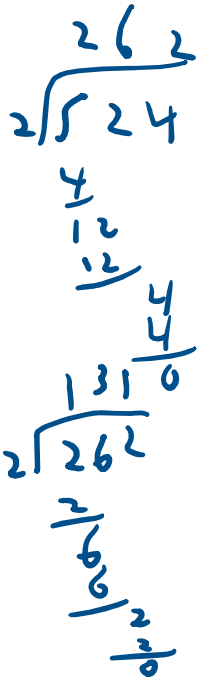
simplify $\sqrt{524}$



$\sqrt{524} = \sqrt{4 \cdot 131}$

$= \sqrt{4}\sqrt{131}$

$= \boxed{2\sqrt{131}}$



Casio calculator

$\sqrt{524}$	22.89104628
$\sqrt{524}$	$2\cdot\sqrt{131}$

decimal

standard