8-23-19 1st Trig

$mg \cdot cm^{-2}$ $\quad \frac{mg}{cm^2}$ 

① $\frac{2m^{-2}y^3}{6my^2} = \frac{2y^3}{6m^2my^2}$

$= \frac{2yyy}{6mmmyy}$

$= \frac{y}{3m^3}$

② $\frac{a^{-3}b^2c^{-1}}{a^{-2}b^{-1}c^2} = \frac{a^2b^2b}{a^3 \quad c^2c}$

$\frac{aabbb}{aaa \quad ccc}$

$\frac{b^3}{ac^3}$

③ $\left(\frac{2m}{3y^2}\right)^{-2}$

$\left(\frac{2m}{3y^2}\right)^{-1 \cdot 2}$

$\left(\frac{3y^2}{2m}\right)^2$

$\frac{3y^2}{2m} \cdot \frac{3y^2}{2m} = \frac{3yy \ 3yy}{2m \ 2m} = \frac{9y^4}{4m^2}$

④ $\left(\frac{2m^2}{5ab}\right)^{-3}$

$\left(\frac{2m^2}{5ab}\right)^{-1\cdot 3}$

$\left(\frac{5ab}{2m^2}\right)^{3} = \frac{5ab}{2m^2}\cdot\frac{5ab}{2m^2}\cdot\frac{5ab}{2m^2}$

$= \frac{125a^3b^3}{8m^6}$

⑤ $\left(2a^{-3}b^2c^{-1}\right)^{-2}$

$\left(\frac{2b^2}{a^3c}\right)^{-1\cdot 2}$

$\left(\frac{a^3c}{2b^2}\right)^{2}$ $\frac{a^3c}{2b^2}\cdot\frac{a^3c}{2b^2} = \frac{a^6c^2}{4b^4}$

⑥ $\left(\frac{2a^{-2}b}{6ab^3}\right)^{-2}$

↓

$\left(\frac{\cancel{2}^{1}\,b}{\cancel{6}^{3}\,a^2ab^{\cancel{3}2}}\right)^{-2}$

$\left(\frac{1}{3a^3b^2}\right)^{-1\cdot 2}$

$(3a^3b^2)^2$

$3a^3b^2\cdot 3a^3b^2$

$3aaabb\cdot 3aaabb$

$9a^6b^4$

⑦ $\left(\frac{2}{3}\right)^{-2}$

$\left(\frac{2}{3}\right)^{-1\cdot 2}$

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

8-23-19 2nd Geo

① Is a △ with side lengths of 6, 7, and 9 a right △?

If it is, then $leg^2 + leg^2 = hyp^2$.

$6^2 + 7^2 = 9^2$?

$36 + 49 = 81$

$85 = 81$ ✗

∴ not a right △.

② Is a △ with sides of 9, 40, and 41 a right triangle?

$leg^2 + leg^2 = hyp^2$

$9^2 + 40^2 = 41^2$

$81 + 1600 = 1681$

$1681 = 1681$ ✓

∴ this is a right △.

③ What about a △ with sides of 8, 10, and 6?

$leg^2 + leg^2 = hyp^2$

$6^2 + 8^2 = 10^2$

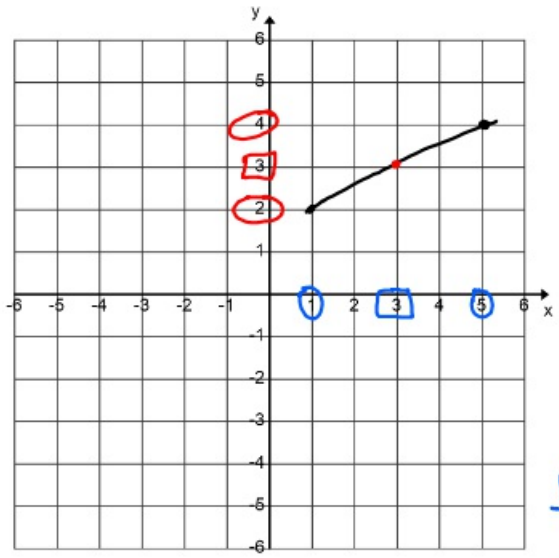
$36 + 64 = 100$

$100 = 100$

∴ this is a right △.

How do I find the middle of 2 numbers?

add them together and divide by 2.



(1, 2)
(5, 4)

$\frac{1+5}{2}$ $\frac{2+4}{2}$

(3, 3)

(5) What is the midpoint between (2, 3) and (12, 33)?

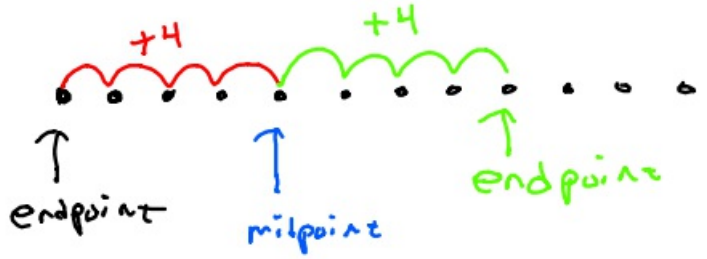
$\left(\frac{2+12}{2}, \frac{3+33}{2}\right)$

(7, 18)

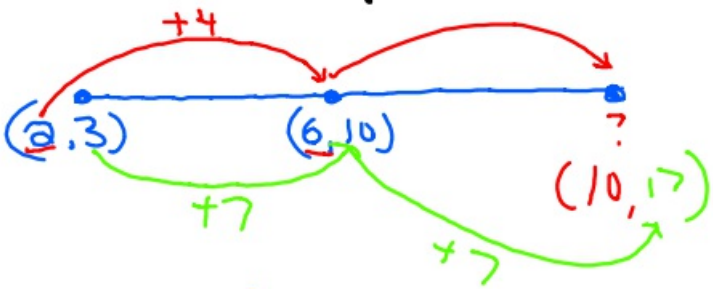
⑥ On $\overline{AT}$, N is the midpoint. If A = (3, 10) and T = (5, 11), where is N located?

$N = \text{midpoint} = \left(\frac{3+5}{2}, \frac{10+11}{2}\right)$

$= \left(4, 10\frac{1}{2}\right)$



⑦ Endpoint at (2, 3) and midpoint at (6, 10). Where is other endpoint?



⑧