BOARD NOTES

28 JANUARY 2020

2A.7 (G) rewrite radical expressions that contain variables to equivalent forms;
2A.7 (H) solve equations involving rational exponents;

We will be able to rewrite radical expressions to equivalent forms.

WHAT WE NEED:

- TI-84

I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVEN THE

- Equation

Laws of Exponents Extended to Rational Exponents

$$a^m \cdot a^n = a^{m+n}$$

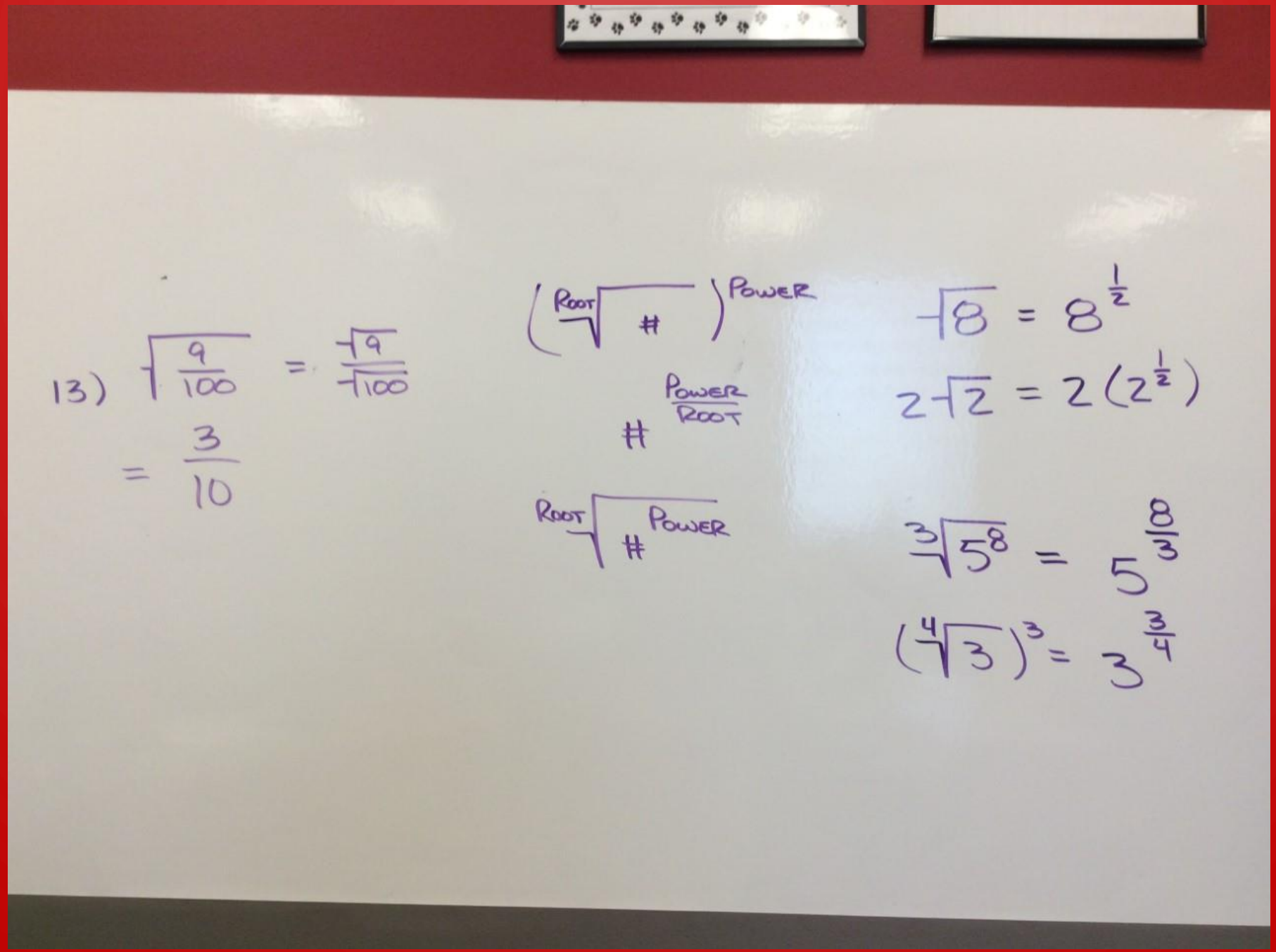
$$a^{\frac{p}{r}} \cdot a^{\frac{q}{s}} = a^{\frac{p}{r}+\frac{q}{s}}$$

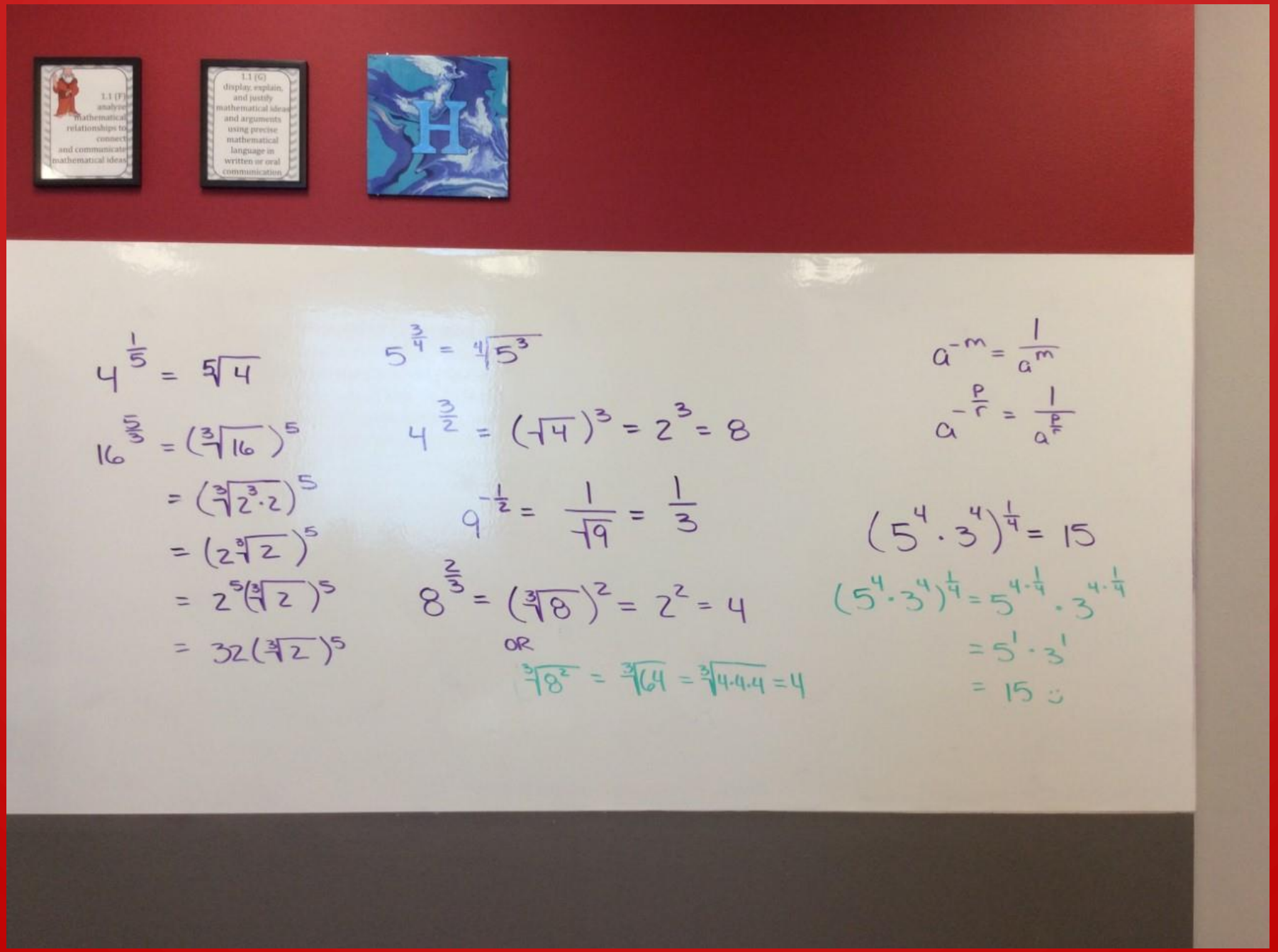
$$\frac{a^m}{a^n} = a^{m-n}$$

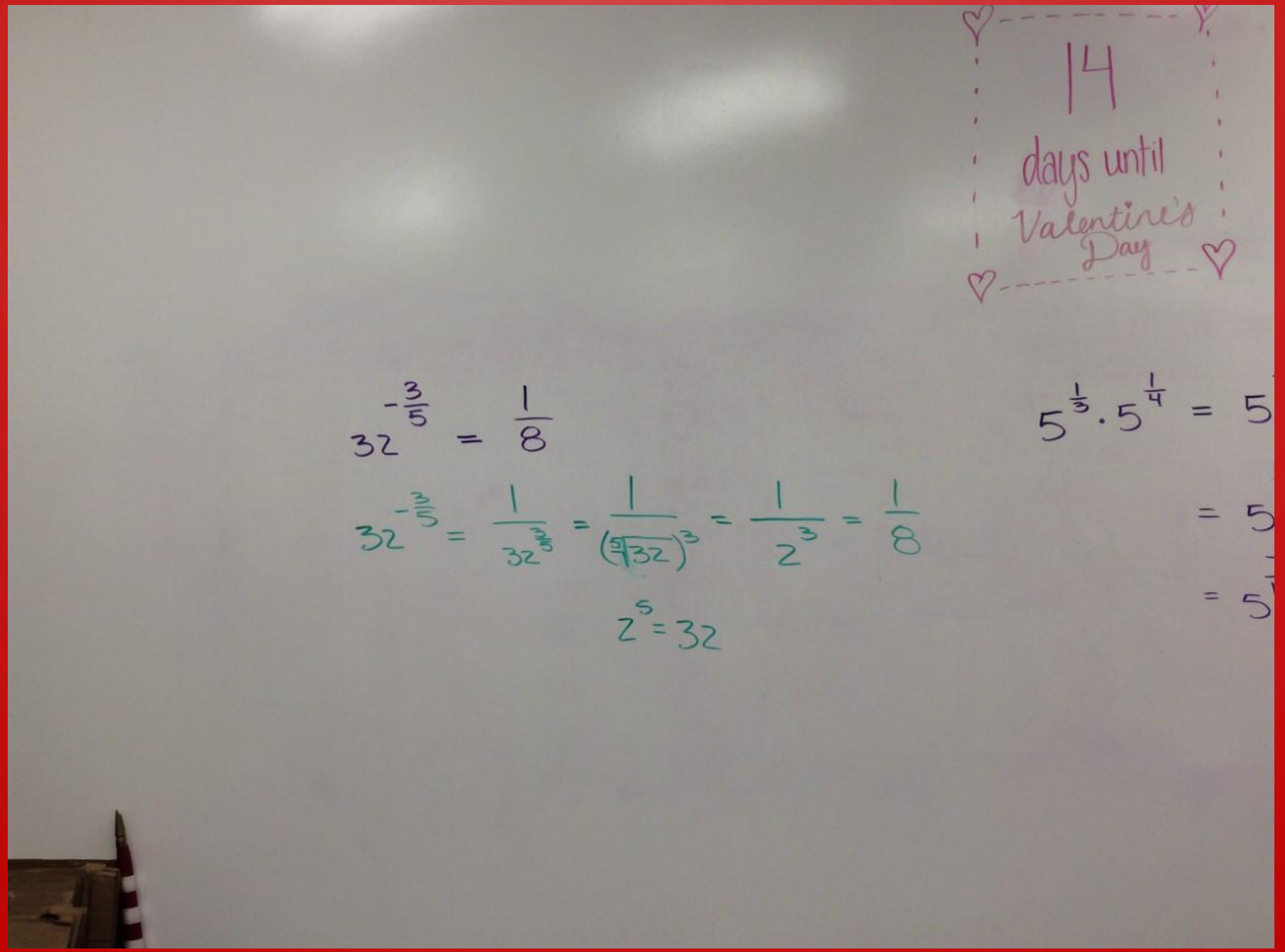
$$\frac{a^{\frac{p}{r}}}{a^{\frac{q}{s}}} = a^{\frac{p}{r}-\frac{q}{s}}$$

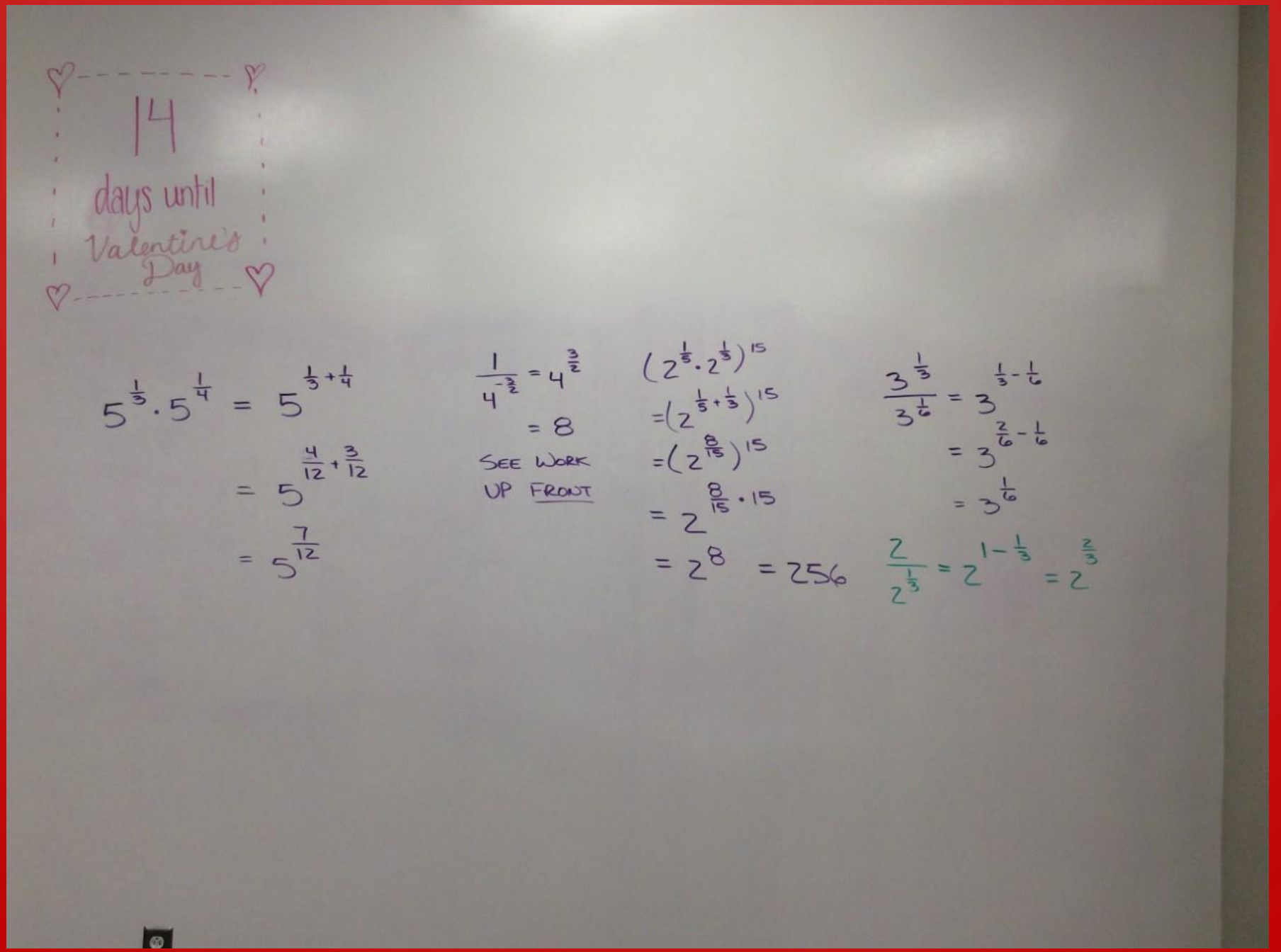
$$(a^m)^n = a^{m \cdot n}$$

$$\left(a^{\frac{p}{r}}\right)^{\frac{q}{s}} = a^{\frac{p}{r} \cdot \frac{q}{s}}$$


13) $\sqrt{\frac{9}{100}} = \frac{\sqrt{9}}{\sqrt{100}}$
$= \frac{3}{10}$
$(\sqrt[\text{ROOT}]{\#})^{\text{POWER}}$
$\#^{\frac{\text{POWER}}{\text{ROOT}}}$
$\sqrt[\text{ROOT}]{\#^{\text{POWER}}}$
$\sqrt{8} = 8^{\frac{1}{2}}$
$2\sqrt{2} = 2(2^{\frac{1}{2}})$
$\sqrt[3]{5^8} = 5^{\frac{8}{3}}$
$(\sqrt[4]{3})^3 = 3^{\frac{3}{4}}$


1.1 (F) analyze mathematical relationships to connect and communicate mathematical ideas
1.1 (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication
H
$4^{\frac{1}{5}} = \sqrt[5]{4}$
$16^{\frac{5}{3}} = (\sqrt[3]{16})^5$
$= (\sqrt[3]{2^3 \cdot 2})^5$
$= (2\sqrt[3]{2})^5$
$= 2^5(\sqrt[3]{2})^5$
$= 32(\sqrt[3]{2})^5$
$5^{\frac{3}{4}} = \sqrt[4]{5^3}$
$4^{\frac{3}{2}} = (\sqrt{4})^3 = 2^3 = 8$
$9^{-\frac{1}{2}} = \frac{1}{\sqrt{9}} = \frac{1}{3}$
$8^{\frac{2}{3}} = (\sqrt[3]{8})^2 = 2^2 = 4$
OR
$\sqrt[3]{8^2} = \sqrt[3]{64} = \sqrt[3]{4 \cdot 4 \cdot 4} = 4$
$a^{-m} = \frac{1}{a^m}$
$a^{-\frac{p}{r}} = \frac{1}{a^{\frac{p}{r}}}$
$(5^4 \cdot 3^4)^{\frac{1}{4}} = 15$
$(5^4 \cdot 3^4)^{\frac{1}{4}} = 5^{4 \cdot \frac{1}{4}} \cdot 3^{4 \cdot \frac{1}{4}}$
$= 5^1 \cdot 3^1$
$= 15$ ☺


14
days until
Valentine's
Day
$32^{-\frac{3}{5}} = \frac{1}{8}$
$32^{-\frac{3}{5}} = \frac{1}{32^{\frac{3}{5}}} = \frac{1}{(\sqrt[5]{32})^3} = \frac{1}{2^3} = \frac{1}{8}$
$2^5 = 32$
$5^{\frac{1}{3}} \cdot 5^{\frac{1}{4}} = 5$
$= 5$
$= 5$


14
days until
Valentine's
Day
$5^{\frac{1}{3}} \cdot 5^{\frac{1}{4}} = 5^{\frac{1}{3}+\frac{1}{4}}$
$= 5^{\frac{4}{12}+\frac{3}{12}}$
$= 5^{\frac{7}{12}}$
$\frac{1}{4^{-\frac{3}{2}}} = 4^{\frac{3}{2}}$
$= 8$
SEE WORK
UP FRONT
$(2^{\frac{1}{5}} \cdot 2^{\frac{1}{3}})^{15}$
$= (2^{\frac{1}{5}+\frac{1}{3}})^{15}$
$= (2^{\frac{8}{15}})^{15}$
$= 2^{\frac{8}{15} \cdot 15}$
$= 2^8 = 256$
$\frac{3^{\frac{1}{3}}}{3^{\frac{1}{6}}} = 3^{\frac{1}{3}-\frac{1}{6}}$
$= 3^{\frac{2}{6}-\frac{1}{6}}$
$= 3^{\frac{1}{6}}$
$\frac{2}{2^{\frac{1}{3}}} = 2^{1-\frac{1}{3}} = 2^{\frac{2}{3}}$