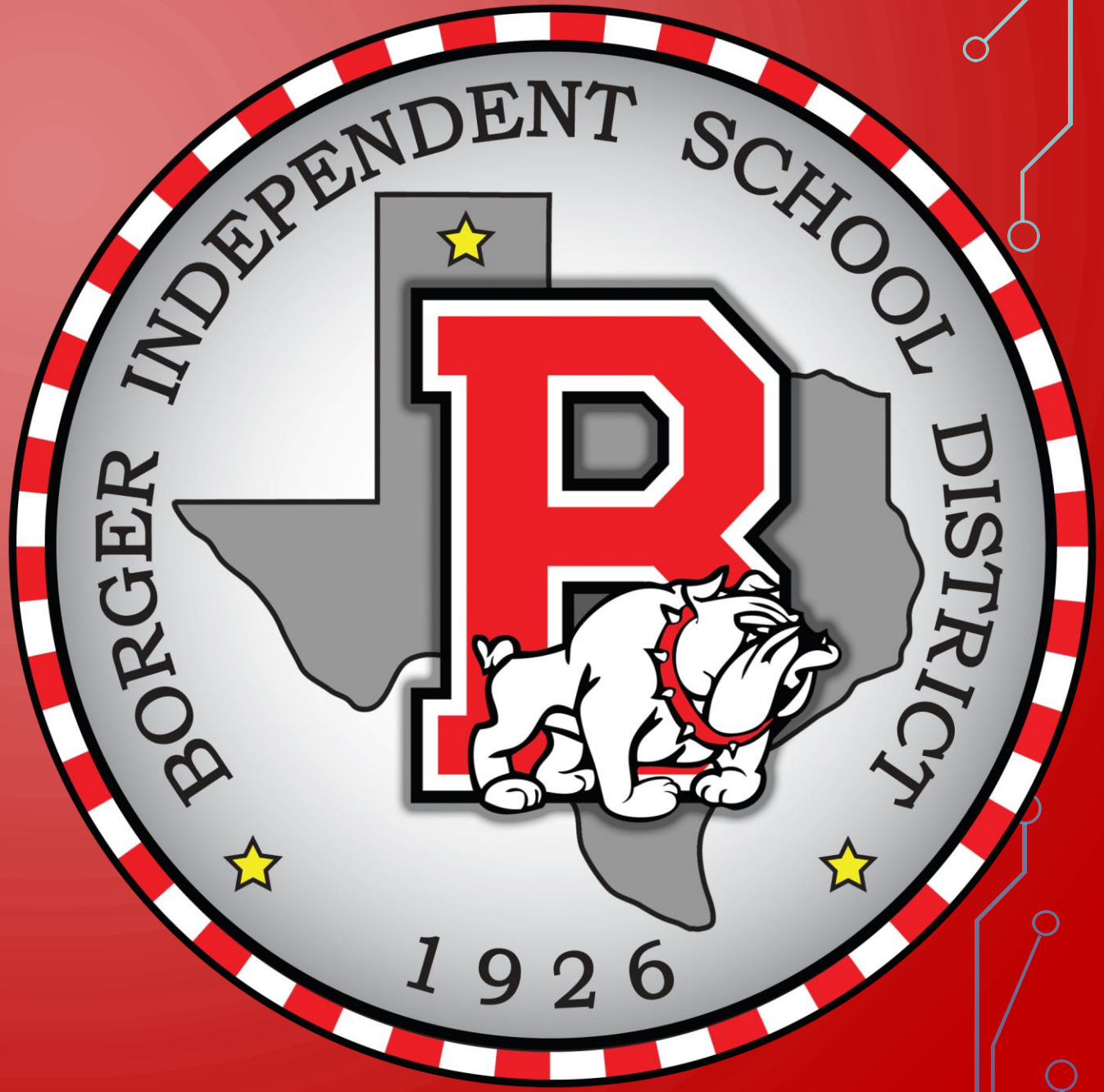
BOARD NOTES

30 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 solve equations involving rational exponents.

WHAT WE NEED:

- TI-84

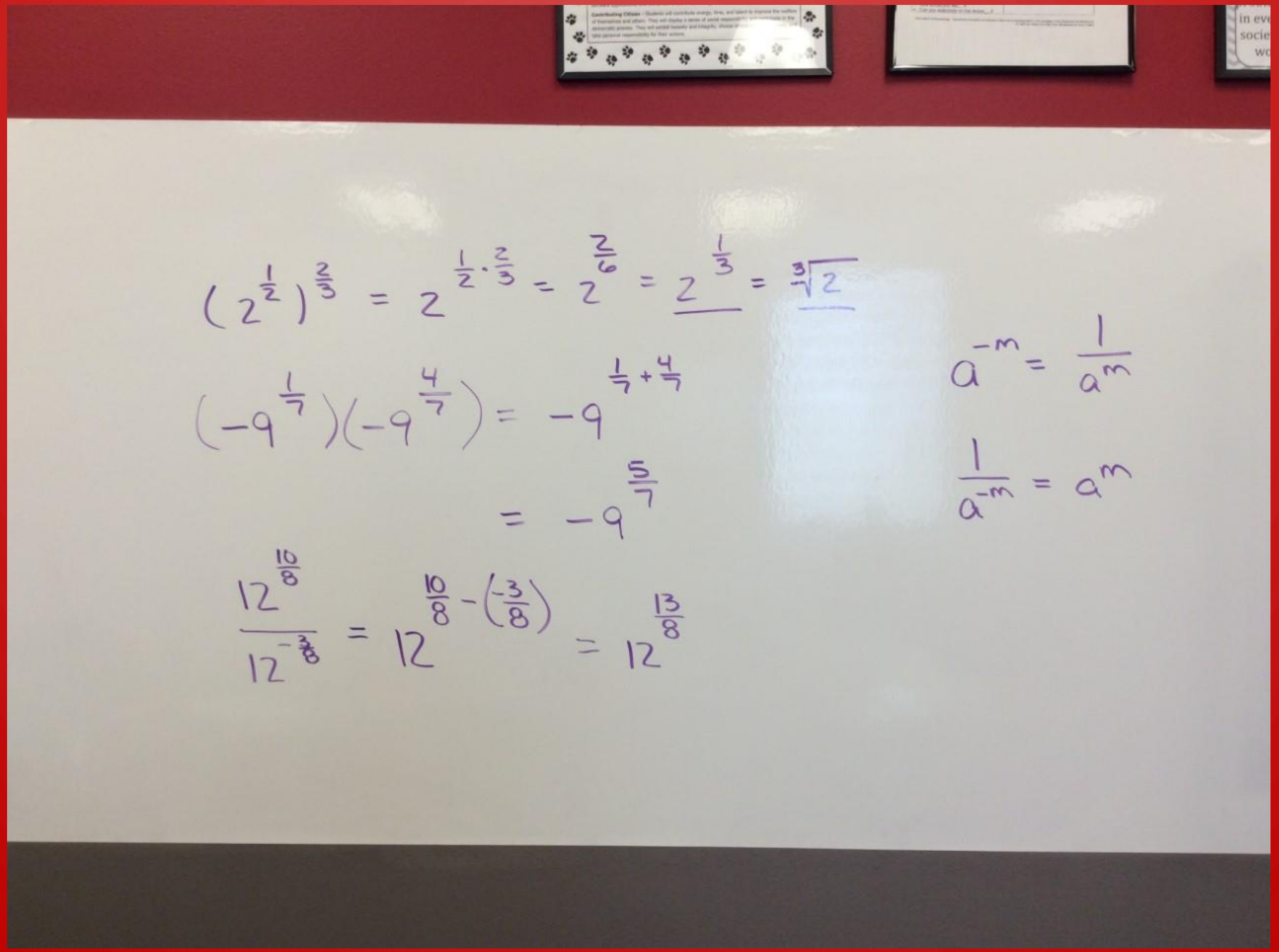
I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVEN THE

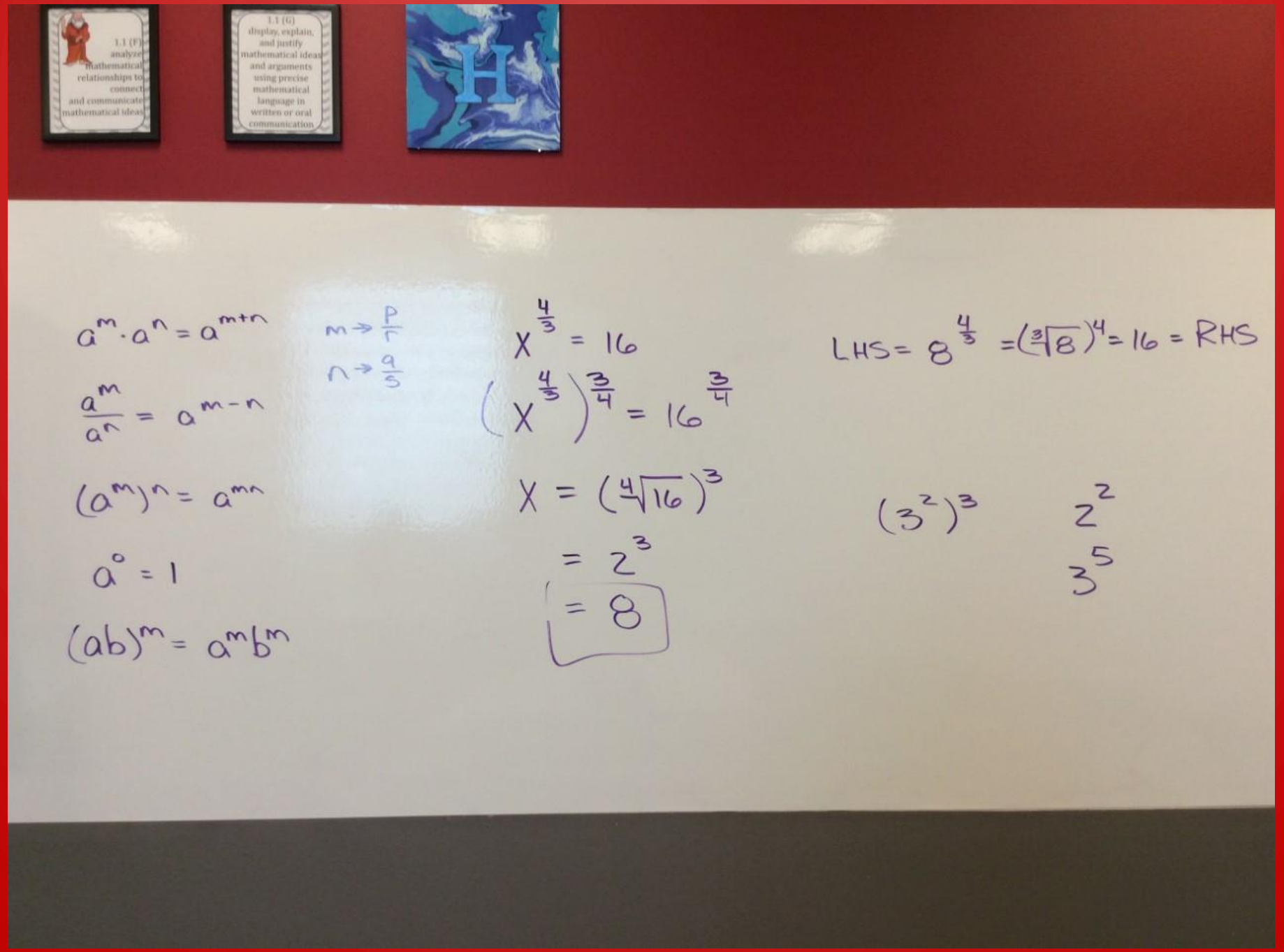
- Equation

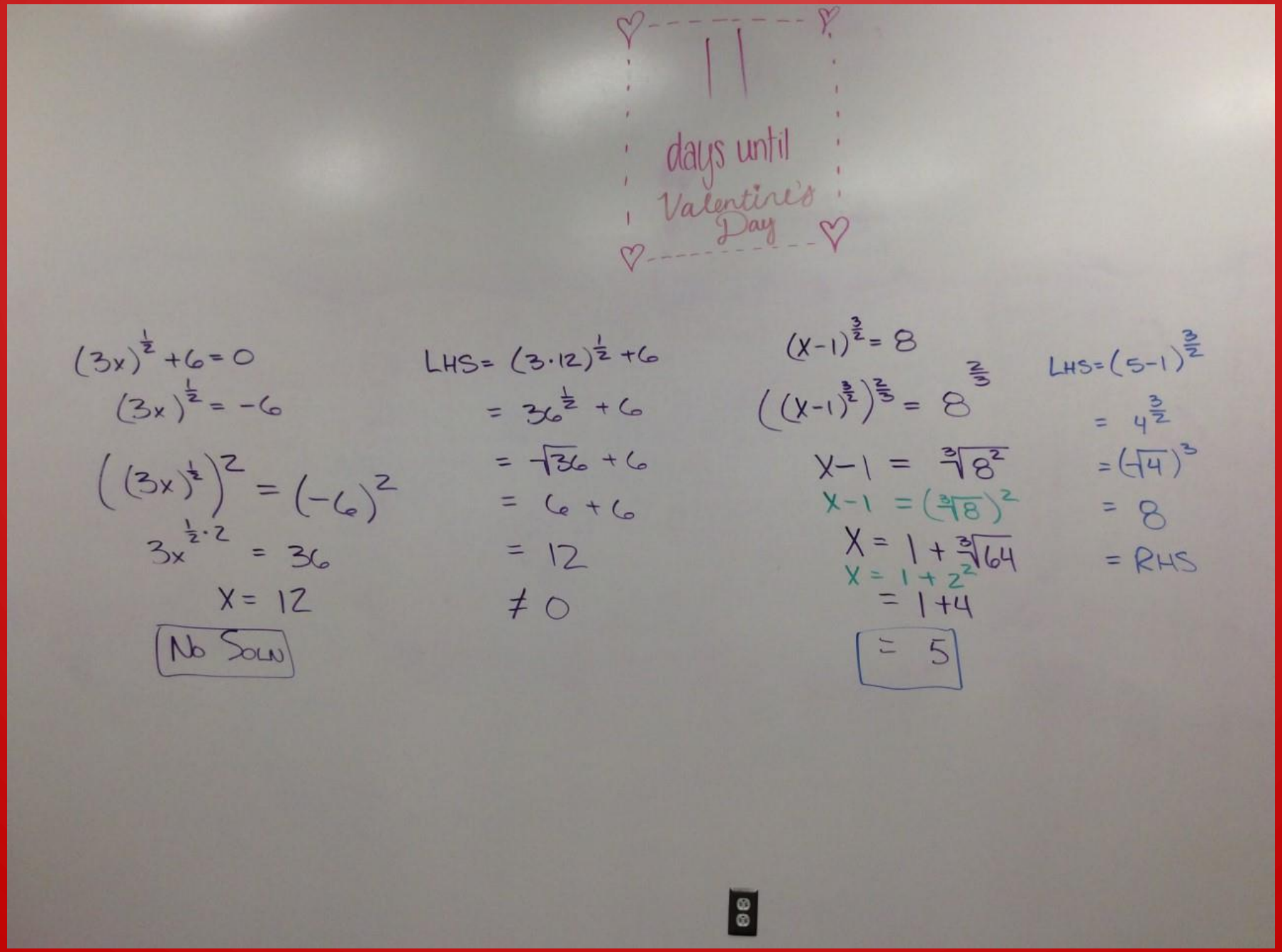
$$-2(3x+4)^{\frac{1}{2}}-3=21$$

1. Isolate the term containing the rational exponent.
2. Raise both sides to the reciprocal power of the exponent.
3. Solve for x.
4. Check solution.
5. Write the solution.

1. $-2(3x+4)^{\frac{1}{2}}=24 \rightarrow (3x+4)^{\frac{1}{2}}=-12$
2. $\left((3x+4)^{\frac{1}{2}}\right)^2=(-12)^2$
3. $3x+4=144 \rightarrow 3x=140 \rightarrow x=\frac{140}{3}$
4. LHS $=-2\left(3\cdot\frac{140}{3}+4\right)^{\frac{1}{2}}-3 \ =-27\neq 21=$ RHS
5. No solution.


$(2^{\frac{1}{2}})^{\frac{2}{3}} = 2^{\frac{1}{2}\cdot\frac{2}{3}} = 2^{\frac{2}{6}} = 2^{\frac{1}{3}} = \sqrt[3]{2}$
$(-9^{\frac{1}{7}})(-9^{\frac{4}{7}}) = -9^{\frac{1}{7}+\frac{4}{7}}$
$= -9^{\frac{5}{7}}$
$\frac{12^{\frac{10}{8}}}{12^{-\frac{3}{8}}} = 12^{\frac{10}{8}-(\frac{-3}{8})} = 12^{\frac{13}{8}}$
$a^{-m} = \frac{1}{a^m}$
$\frac{1}{a^{-m}} = a^m$


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
$a^m \cdot a^n = a^{m+n}$
$m \to \frac{p}{r}$
$n \to \frac{q}{s}$
$\frac{a^m}{a^n} = a^{m-n}$
$(a^m)^n = a^{mn}$
$a^0 = 1$
$(ab)^m = a^m b^m$
$x^{\frac{4}{3}} = 16$
$(x^{\frac{4}{3}})^{\frac{3}{4}} = 16^{\frac{3}{4}}$
$x = (\sqrt[4]{16})^3$
$= 2^3$
$= 8$
LHS $= 8^{\frac{4}{3}} = (\sqrt[3]{8})^4 = 16 =$ RHS
$(3^2)^3$
2^2
3^5


11
days until
Valentine's
Day
$(3x)^{\frac{1}{2}} + 6 = 0$
$(3x)^{\frac{1}{2}} = -6$
$\left((3x)^{\frac{1}{2}}\right)^2 = (-6)^2$
$3x^{\frac{1}{2}\cdot 2} = 36$
$x = 12$
No Soln
LHS $= (3\cdot 12)^{\frac{1}{2}} + 6$
$= 36^{\frac{1}{2}} + 6$
$= \sqrt{36} + 6$
$= 6 + 6$
$= 12$
$\neq 0$
$(x-1)^{\frac{3}{2}} = 8$
$\left((x-1)^{\frac{3}{2}}\right)^{\frac{2}{3}} = 8^{\frac{2}{3}}$
$x - 1 = \sqrt[3]{8^2}$
$x - 1 = (\sqrt[3]{8})^2$
$x = 1 + \sqrt[3]{64}$
$x = 1 + 2^2$
$= 1 + 4$
$= 5$
LHS $= (5-1)^{\frac{3}{2}}$
$= 4^{\frac{3}{2}}$
$= (\sqrt{4})^3$
$= 8$
$=$ RHS

$(5-1)^{\frac{3}{2}}$

$4^{\frac{3}{2}}$

$(\sqrt{4})^3$

8

RHS

$-3(2x+4)^{\frac{2}{3}}+1=-11$

$-3(2x+4)^{\frac{2}{3}}=-12$

$\left((2x+4)^{\frac{2}{3}}\right)^{\frac{3}{2}}=(4)^{\frac{3}{2}}$

$2x+4=8$

$2x=4$

$x=2$

LHS $= -3(2\cdot 2+4)^{\frac{2}{3}}+1$

$= -3(8)^{\frac{2}{3}}+1$

$= -3(4)+1$

$= -11$

$=$ RHS