Repeating Decimals to Fractions Homework

1) Which number is equivalent to the repeating decimal $0.\overline{242}242242...$?

A $\frac{24}{100}$

(B) $\frac{242}{999}$

C $\frac{242}{1000}$

D $\frac{2422}{9999}$

1) Identify digits repeating
2) Are repeating digits directly after decimal? Yes!
3) repeating #'s in numerator
4) 9's in denominator
* 3 9's because 3 digits repeat

2) Which of these is a rational number?

A $\sqrt{254}$ - Not perfect square

B $\frac{\sqrt{125}}{5}$ - Not perfect square

(C) $-\frac{\sqrt{4}}{2} = -\frac{2}{2} = -1$

D $-\sqrt{3}$ - Not perfect square

3) Which fraction is equivalent to $0.\overline{07}$?

A $\frac{7}{100}$

(B) $\frac{7}{99}$ $\quad \frac{07}{99} = \frac{7}{99}$

C $\frac{7}{90}$

4) Which fraction is equivalent to $0.\overline{15}$?

(A) $\frac{5}{33}$ $\quad \frac{15 \div 3}{99 \div 3} = \frac{5}{33}$

B $\frac{3}{20}$

C $\frac{1}{6}$

5) Which number below is irrational?

A $\sqrt[3]{8} = 2$ (2·2·2)

B $\sqrt[3]{125} = 5$ (5·5·5)

C $\sqrt{49} = 7$ (7·7)

(D) $\sqrt{52}$ - not a perfect square

6) In which set(s) of numbers does the real number 0 belong?

~~A~~ irrational only - non-terminating, non-repeating

~~B~~ rational, whole, and natural - counting #'s

~~C~~ rational, integer, and natural

(D) rational, integer, and whole ✓ ✓ ✓

7) Which fraction is equal to $0.\overline{5}$?

A $\frac{11}{20}$

B. $\frac{9}{20}$ $\quad \frac{5}{9}$

C. $\frac{5}{11}$

(D.) $\frac{5}{9}$

8) Which fraction is equivalent to $3.\overline{33}$?

(A) $\frac{10}{3}$

B. $\frac{36}{11}$

C $\frac{333}{100}$

D. $\frac{91}{30}$

$3\frac{33 \div 33}{99 \div 33} = 3\frac{1}{3} = \frac{10}{3}$

9) Convert $0.\overline{67}$ to a fraction reduced to lowest terms. Show your work.

$\frac{67}{99}$ ← digits repeating

← two 9's, because two digits repeat

1) $.\overline{4} \times \frac{2}{3} = \frac{4}{9} \times \frac{2}{3} = \frac{8}{27}$

2) $1\frac{3}{5} \div 2.\overline{2}$

$\frac{8}{5} \div 2\frac{2}{9}$

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$\frac{8}{5} \div \frac{20}{9}$

$\frac{8}{5} \times \frac{9}{20}$

3) $1.\overline{3} + 2\frac{1}{18}$

$1\frac{3}{9} + 2\frac{1}{18}$

$\frac{12}{18} + \frac{37}{18}$

$\frac{49}{18}$

Practice

1) $\frac{a}{x} + \frac{b}{x} = c$ Solve for x

$x \cdot \frac{a}{x} + x \cdot \frac{b}{x} = c \cdot x$

$\frac{a}{c} + \frac{b}{c} = \frac{cx}{c}$

$\boxed{\frac{a}{c} + \frac{b}{c} = x}$

Practice Addition Problems

2) $\frac{x+2}{y-1} = 2$ Solve for x

$(y-1)\frac{x+2}{y-1} = 2(y-1)$

$x + 2 = 2y - 2$ -2 -2

$\boxed{x = 2y - 4}$

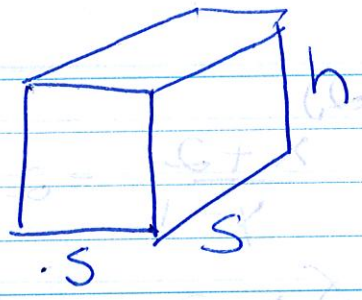
3. $m = \frac{x+h}{p}$ Solve for x

$p \cdot m = \frac{x+h}{p} \cdot p$

$pm - h = x + h - h$

$\boxed{pm - n = x}$

4.)



a.) $A = 2s^2 + 4sh$

b.) Find h

$A = 2s^2 + 4sh$

$A - 2s^2 = 2s^2 + 4sh - 2s^2$

$\frac{A - 2s^2}{4s} = \frac{4sh}{4s}$

∴ if $s = 10$ cm
$A = 760$ what is height.

$\frac{A - 2s^2}{4s} = h$

$\frac{760 - 2(10)^2}{4(10)} = h$

$\frac{760 - 200}{40} = h$

$14 = h$