

S.M.ART School MAB2 HW due 04-22-2024

C1. Compute
$$\frac{\left(\left(3\frac{7}{12} - 2\frac{11}{18} + 2\frac{1}{24} \right) * 1\frac{5}{31} - \frac{3}{52} * \left(3\frac{1}{2} + \frac{5}{6} \right) \right) * 1\frac{7}{13}}{\frac{19}{84} : \left(5\frac{13}{42} - 2\frac{13}{28} + \frac{5}{24} \right) + 1\frac{2}{27} - \frac{1}{3} * \frac{4}{9}}$$

Label every operation you must execute. Make sure the order of labels corresponds to the Order of Operations principles. Execute each operation according to the order of labels. Provide the result of each operation. (Column “:” means “Divide”). The result of your computation is a whole number.

Extract a factor out of radical ($\sqrt{\quad}$)

Example $\sqrt{0.32} = \sqrt{(32/100)} = \sqrt{32} / \sqrt{100} = 4*\sqrt{2} / 10 = 2*\sqrt{2} / 5$

S2 $\sqrt{2.89}$

S3 $\sqrt{2,890}$

S4 v0.0064

S5 v324

- W1 How much time (in minutes) is saved, if you cover a mile going 50 mph instead of 40 mph?
- W2 How much time (in minutes) is saved, if you cover a mile going 60 mph instead of 50 mph?
- W3 On a road with a posted legal speed limit of 45mph a motorist covered a mile per 1 minute and 20 seconds. Is he in violation, and if so – by how much?
- W4 Towns A and B are 960 miles apart. Train leaves A in the direction of B at 50 miles per hour. How long will it take before the train meets another train, going from B to A at a speed 70 miles per hour?

W5 A man walked into the country at the rate of 3 mph and hurried back over the same road at 4 mph. The round trip took 5 hours and 15 min. How far into the country did he walk?

W6 If Robert can seal 40 envelopes in one minute, and Paul can do the same job in 80 seconds, how many minutes (to the nearest min.) will it take the two of them, working together, to seal 350 envelopes?

G1 The sum of the digits of two-digit number is 10. If 18 is added to the number, the result is equal to the number obtained by reversing the digits of original number. Find the original number.

G2 If a record spins at the rate of 48° per second, how many complete revolutions does it make in five minutes?

Make sure you understand a proof of the Identity we developed at the last class. (You should use Distributive Property)

For any real numbers X, Y

$$(X + Y)^2 = X^2 + 2*X*Y + Y^2$$

A1 Using the formula above explain the following statement:

$$(y + 1)^2 = y^2 + 2*y + 1$$

A2 Using the formula above explain the following statement:

$$(W + 3)^2 = W^2 + 6*W + 9$$