

YOUR NAME: \_\_\_\_\_

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Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Barbie and Ken are in love and decide to spend a weekend together in Paradise. Barbie has to drive 200 miles to Paradise whereas Ken has to drive 210 miles to get there. If Ken averages 10 mph more than Barbie and it takes him 30 minutes less than Barbie to finish his trip, what is Barbie's average speed? (Variables with precise meaning, equations and solution required.)

2. Simplify the following radical expressions:

(a)  $\sqrt{72a^5} =$

(b)  $\sqrt[3]{54x^3y^8z^7} =$

3. Adam and Eve are picking apples in the "Divine Orchards". Adam is a novice and needs 15 minutes to pick a bushel by himself, whereas Eve has done this before and needs only 10 minutes to pick a bushel by herself. How much time would it take them, working together, to pick 12 bushels of apples?