Name: _____ Date: _____

BLM 6–4

Chapter 6 Problems of the Week

1. Orchard owners like to pick apples before they fall to the ground since apples that fall get bruised. Some owners suggest that the extent of bruising depends on the mass of the apple and how far it falls. The apples that have the greatest product when you multiply these values will have the biggest bruises.

a) One fallen apple had a mass of $14\frac{1}{3}$ g and fell from a branch $4\frac{1}{4}$ m high. Another apple of similar size and shape had a mass of $15\frac{1}{2}$ g and fell a distance of $3\frac{1}{3}$ m. Which one will have the largest bruise? Explain.

b) Do you think there are other factors that might affect the extent of the bruising? Explain.

2. Memory cards used in digital cameras come in many different rectangular shapes. Your class decides to compare the length of three different memory cards. At the end of the experiment, the teams combined their data in the table below.

Team	Length (cm)
1	$5\frac{1}{2}$
2	$4\frac{3}{4}$
3	$8\frac{1}{2}$

a) What was the overall average length of the cards? Express your answer as a mixed fraction.

b) The width of each card is $1\frac{1}{3}$ cm. The maximum area for cards that meet 2007 specifications is 8 cm^2. Do all of these cards fit those specifications? Express your answers as mixed fractions.

3. A 90-cm plastic figure is a $\frac{1}{20}$ scale version of a figure that was used in a movie. How many metres tall was the actual figure?

4. A pool is being filled with water. After 1 h the pool is filled $\frac{1}{4}$ full. How full is the pool after $3\frac{1}{2}$ h? What fraction of the pool still needs to be filled?

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(continued)

5. On a field trip to the park, the teacher rewards the winners of a scavenger hunt with candies. The first place finisher receives $\frac{1}{4}$ of the candies, the second place finisher receives $\frac{1}{3}$ of the rest of the candies, the third place finisher receives one half of the remaining candies, and the fourth place finisher receives the remaining candies.

a) If the fourth place finisher received six candies, how many candies did the teacher give away in total?

b) How many candies did each of the other finishers receive?

6. Bryce was asked to go to his mother's study to retrieve his dad's picture and its enlargement. When Bryce got to the study, he found five pictures of his dad in the following sizes:

- 9 cm × 10 cm
- 6 cm × 8 cm
- 10 cm × 12 cm
- 8 cm × 9.6 cm
- 5 cm × 6.5 cm

Which two pictures did Bryce need to take? Explain.

7. The contents of a bottle of lemonade is $\frac{7}{10}$ L. Dirk comes home after soccer practice and drinks $\frac{3}{4}$ of the contents. Dirk's mother says, "You have drunk at least $\frac{1}{2}$ of a litre of lemonade." Is Dirk's mother right? Explain.

8. A pump empties $\frac{1}{5}$ of a pool in an hour. It runs for $3\frac{1}{2}$ h. What fraction of the pool is pumped? What fraction still needs to be pumped? How long will it take to empty this fraction of the pool?