Categorizing and Analyzing

Multiplication and Division Situations

The following represents our thinking on this task. Feel free to disagree or improve our work.

Problem or Situation	Problem Type	What do we know and what are we looking for?			Semantic and Standard Number Sentence(s)
	• Equal Groups • Rate • Multiplicative Comparison • Product of Measurements • Combination Problem	Know the **Number** and **Size** of groups but NOT the **TOTAL** (MULTIPLICATION)	Know the **Total** and **Number** of groups but NOT the **SIZE** of each group (or the **Unit** being multiplied) (PARTITIVE or SHARING DIVISION)	Know the **Total** and **Size** of each group but NOT the **NUMBER** of groups (e.g., the **Multiplier**) (QUOTATIVE or MEASUREMENT DIVISION)	
1. Sarah was planting corn. The seeds cost $2.50 a pack. She had 75 seeds and wanted to plant 15 rows. How many seeds in each row?	Equal Groups	✗	✓	✗	75 ÷ 15 = ?
2. There were 15 kids at the barbecue. One of the older kids hid some prizes. Simon found 30 prizes. This was 6 times as many as his sister, Sharon. How many prizes did Sharon find?	Multiplicative Comparison	✗	✓	✗	30 = 6 x ? 30 ÷ 6 = ?
3. John needed $2.00 to go to the dance. He had 4 pairs of shorts and 5 tops. How many outfits could he choose from?	Combination	✓	✗		4 x 5 = ?
4. An enlarged picture is three times taller than its original. The picture is 180 mm tall. How tall was the original?	Multiplicative Comparison	✗	✓	✗	180 = 3 x ? 180 ÷ 3 = ?
5. A rectangle with an area of 208 cm^2 has one side 16 cm long. How long is the adjacent side?	Product of Measurements	✗	✓		16 x ? = 208 208 ÷ 16 = ?
6. Jeremy picked 6 bags of apricots. If a 3 kg bag of apricots costs $12.60, what is the price per kilogram?	Rate	✗	✓	✗	12.60 ÷ 3 = ?
7. The Grade 6 students were selling cupcakes to raise funds for the school camp. The cupcakes cost $4.80 a box. The parents had baked 400 cupcakes and needed to put them into boxes of 8. How many boxes would they need?	Equal Groups	✗	✗	✓	400 ÷ 8 = ?
8. The burger place had a special $18 Family Feast Deal. It was packed with people. There were about 6 people at each table and there were about 36 tables. About how many people were there?	Equal Groups	✓	✗	✗	6 x 36 = ?
9. Helen likes to walk 20 km every day. She walks at an average speed of 5 km/h. How far does she walk in 3 hours?	Rate	✓	✗	✗	5 x 3 = ?
10. Apricots cost $4.30 a kilogram. If a box of apricots costs $12.60, how much must it weigh?	Rate	✗	✗	✓	12.60 ÷ 4.30 = ?
11. There were 6 times as many girls racing as boys. There were 18 girls and 36 parents. How many boys were there?	Multiplicative Comparison	✗	✓	✗	18 = 6 x ? 18 ÷ 6 = ?

Of the problems you just looked at, which one(s) do you predict students would find most challenging? Why do you think so? Talk about what you might do to help them understand and gain access into this problem.