All Transportations

Kinder & First Grade: solve at least 3 problems.
Second & Third Grade: solve at least 7 problems.
Fourth Grade and above: solve at least 12 problems.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><img src="image1.png" alt="Image" /></td>
<td>Jaden’s House 3 miles</td>
<td>Post Office 4 miles</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Addi’s house 100 yards</td>
<td>School 80 yards</td>
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<td>3.</td>
<td></td>
<td>At the beginning, there are 6+1 or 7 people on the bus. After 3 stops, there are 7 + 2 + 2 + 2 = 13 people on the bus.</td>
<td>13 [people]</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>The distance from his house to his destination is 4 + 5 + 7 = 16 miles.</td>
<td>16 [miles]</td>
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<td>5.</td>
<td></td>
<td>If there are 20 people, they will need 20 ÷ 5 or 4 cars. The additional 3 people will need an extra car. So, the total number of cars needed is 4 + 1 = 5 cars.</td>
<td>5 [cars]</td>
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<tr>
<td>6.</td>
<td></td>
<td>When half-full, each car has 18 ÷ 2 = 9 passengers. If there are 3 cars that are half-full, there will be 3 × 9 = 27 passengers on the train.</td>
<td>27 [passengers]</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td>36 − 9 + 1 (himself) = 28</td>
<td>28 [passengers]</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td>Draw a model</td>
<td>42 ÷ 3 = 14 people in 1 unit. Minivan holds 14 × 2 = 28 people</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td>Twice faster, means she’ll reach Leavenworth, when Peter would be halfway or 40 miles away</td>
<td>40 [miles]</td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td>Second car gains 60 − 50 = 10 miles every hour</td>
<td>For them to be 30 miles apart, it will take 30 ÷ 10 = 3 hours</td>
</tr>
</tbody>
</table>
11. Draw a model

<table>
<thead>
<tr>
<th>Red</th>
<th>White</th>
<th>Blue</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>+3</td>
</tr>
</tbody>
</table>

Red: 8
White: 4
Blue: 9

12. There are 29 rows in total, 1 is special with 4 seats.

$$28 \times 6 + 1 \times 4 = 172$$ seats

13. For the first two hours, he drove 45 \times 2 = 90 miles; after that he drove 55 \times 3 = 165 miles.

$$90 + 165 = 255$$ miles

14. Sarah is 60-45 = 15 mph faster than Ashrita, which means she’ll catch Ashrita on her next loop. Thus, the distance between the racers is 10 miles.

$$\frac{10 \text{ miles}}{15 \text{ mph}} = \frac{2}{3} \text{ hour} = 40 \text{ minutes}$$

15. Total trip both ways: 343 \times 2 = 686 miles. Gas needed for the trip: 686 \div 28 = 24.5 gallons.

Cost of the gas: 24.5 gallons \times $3.50 = $85.75

16. Pranav was flying some part of a trip 100mph, the other part 80 mph

If he would have flown 80mph the whole trip, it would be 80 \times 2 \frac{3}{4} \text{h} = 220 miles

Which is 245-220 = 25 miles less.

Which means slowing down by 20 miles per hour costed him 45 miles.

$$\frac{45}{20} = \frac{9}{4} = 1 \frac{1}{4} \text{h} = 1 \text{h 15 min}$$

17. The whole travel took 2 + 3 = 5 hours

10mph higher speed for 3 hours adds extra 30 miles

$$\frac{(230-30)}{5} = 40 \text{ mph}$$ was the rate before lunch

Check whether it works: $$2 \times 40 + 3 \times 50 = 80 + 150 = 230$$ miles

18. 8 \times 3 = 24 miles is the initial distance between Ron and his sister

12 – 8 = 4 miles Ron is gaining every hour

$$24 \div 4 = 6 \text{ hours}$$

In 6 hours Ron will catch up his sister

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Solution is available on April 2, 2020 at [www.mathinaction.org](http://www.mathinaction.org)