

Set up a two-column proof:

| Statement | Reason |
|--------------------------------|------------------------|
| 1) Given: $15y + 7 = 12 - 20y$ | ① Given |
| Prove: $y = \frac{1}{7}$ | ② Addition Property |
| ① $15y + 7 = 12 - 20y$ | ③ Subtraction Property |
| ② $35y + 7 = 12$ | ④ Division Property |
| ③ $35y = 5$ | |
| ④ $y = \frac{1}{7}$ | |

2) Given: $8(2x - 5) - 2 = 6$

Prove: $x = 3$

| Statement | Reason |
|-----------------------|--|
| ① $8(2x - 5) - 2 = 6$ | ① Given |
| ② $16x - 40 - 2 = 6$ | ② Distributive Property |
| ③ $16x - 42 = 6$ | ③ Subtraction (or combining subtraction like terms) |
| ④ $16x = 48$ | ④ Addition Property |
| ⑤ $x = 3$ | ⑤ Division Property |

P. 35: 1, 2, 7, 8, 11, 12, 14

P. 40: 1-10

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- ① H: $3x - 7 = 32$ C: $x = 13$
- ② H: I'm not tired C: I can't sleep
- ⑦ B is between A and C if and only if $AB + BC = AC$
- ⑧ $m\angle AOC = 180$ if and only if $\angle AOC$ is a straight angle
- ⑪ IF $ab < 0$ then $a < 0$
Counter: $a = 1$ $b = -1$
- ⑫ IF $n^2 = 5n$ then $n = 5$
Counter $n = 0$
- ⑭ IF $xy > 5y$, then $x > 5$
Counter $x = -2$ $y = -1$

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- ① Reflexive Prop.
- ② Transitive Prop.
- ③ Symmetric Prop.
- ④ Subtraction Prop.
- ⑤ Division Prop.
- ⑥ Multiplication Prop.
- ⑦ Distributive Prop.
- ⑧ Addition Prop.
- ⑨ Substitution Prop.
- ⑩ Transitive Prop.