Section 3.5 Estimation

Note: There is more than one correct answer for these questions. Here are some possibilities.

3. Exercises 5 and 6 in Primary Math Workbook 5A

Exercise 5 pg 14:
1. You can check these mental calculations with a calculator
2. b $78 \times 586 \approx 80 \times 600 = 48{,}000$; d. $4165 \times 53 \approx 4000 \times 50 = 200{,}000$
3. Estimate by $30 \times 200 = 6{,}000$ dollars

Exercise 6 pg 16
1. You can check these mental calculations with a calculator
2.b $324 \div 42 \approx 320 \div 40 = 8$ c. $4406 \div 49 \approx 4500 \div 50 = 90$
d. $1705 \div 31 \approx 1800 \div 30 = 60$

4. Estimate $1044 \div 36 \approx 1000 \div 40 = 25$

4. a. $50 \times 20 < 57 \times 23 < 60 \times 30$, so 57×23 is between 1000 and 1800
b. $150 \times 300 < 167 \times 347 < 200 \times 350$, so 167×347 is between 45,000 and 70,000.

5. An example is $140 + 130$. Rounding first gives the estimate $100 + 100 = 200$, but first adding and then rounding gives 200.

6a. A high estimate for $1556 - 371$ is given by $1600 - 300 = 1300$. Here we increase the first number (the minuend) and decrease the second number (the subtrahend) in order to over estimate the exact answer.

6b. An underestimation for $3462 \div 28$ is given by $3000 \div 30 = 100$. Here we round 28 up and "round" 3462 down.

6c. We can estimate the division problem $5760 \div 800$ by $5600 \div 800 = 7$. The elevator will lift 7 gorillas. Notice that it is important here to *underestimate* the exact quotient since placing too many gorillas on the elevator could result in disaster! Notice also that this is the correct answer to the problem, not merely an estimation, since we should not include "fractions of a gorilla."