

# Empire State Mathematics March to May 2010 Supplement

## Grade 4 Answer Key

### Lesson 1 *Comparing and Ordering Fractions* pp. 4–7

1. A [4.N.7]
2. D [4.N.8]
3. A [4.N.9]
4. B [4.N.7, 8]
5. B [4.N.9]
6. Short-response [4.N.7, 8]

A.  $\frac{4}{10}$   
 B.  $\frac{2}{5}$

7. Extended-response [4.N.9]



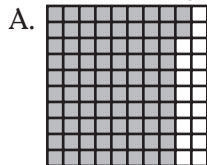
- B.  $\frac{5}{10} < \frac{6}{10} < \frac{8}{10}$ ; *Explanations may vary but should say something like the following:*  
 I noticed all the denominators were the same. So I compared the numerators and put them in order from smallest to largest:  $5 < 6 < 8$ .

### Lesson 2 *Decimals* pp. 8–11

1. C [4.N.10]
2. B [4.N.11]
3. A [4.N.24]
4. C [4.N.11]
5. D [4.N.24]
6. Short-response [4.N.24]

$\frac{3}{10}$ ; *Explanations may vary but should say something like the following:* Point *P* lies between 0.2 and 0.4. So it is equal to 0.3. The decimal 0.3 means three-tenths, so the fraction for it is written  $\frac{3}{10}$ .

7. Extended-response [4.N.10]



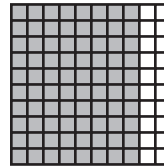
- B. 0.82; *Explanations may vary but should say something like the following:* There are 100 equal parts, and I counted 82 of them shaded. The fraction  $\frac{82}{100}$  is eighty-two hundredths, which is equal to the decimal 0.82.

### Lesson 3 *Comparing and Ordering Decimals* pp. 12–15

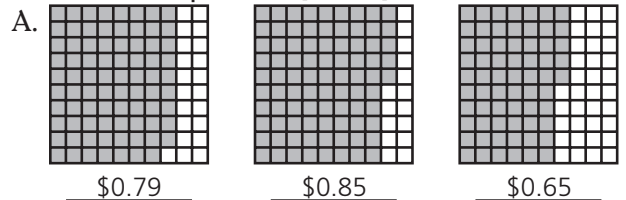
1. B [4.N.12]
2. A [4.N.12]
3. D [4.N.12]
4. D [4.N.12]
5. Short-response [4.N.12]

A. *Answers may vary but should give a value between \$0.70 and \$0.85, for example:*  
 \$0.80

B. *Answers may vary but should show the grid correctly filled in for the answer given in part A, for example:*



6. Extended-response [4.N.12]



B. \$0.65, \$0.79, \$0.85; *Explanations may vary but should say something like the following:* I compared the tenths digits first and found the least digit, 6. I put that amount, \$0.65, first. Then I looked for the next greatest number of tenths, 7, and put that amount, \$0.79, second. The last one is the greatest amount, \$0.85.

### Lesson 4 *Multiplying Two-Digit Numbers* pp. 16–19

1. D [4.N.19]
2. D [4.N.19]
3. C [4.N.19]
4. B [4.N.19]

5. C [4.N.19]  
 6. C [4.N.19]  
 7. Short-response [4.N.19]  
 $32,000$ ;  $800 \times 40 = 32,000 \rightarrow$   
 $8 \times 4 = 32$  plus 3 zeros is 32,000

8. Extended-response [4.N.19]

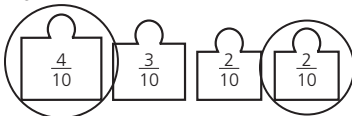
A. \$2,340;

$$\begin{array}{r} 65 \\ \times 36 \\ \hline 390 \\ 1950 \\ \hline 2,340 \end{array}$$

B. Diego; *Explanations may vary but should say something like the following:* Kenneth will pay the bank  $\$35 \times 60 = \$2,100$ . Diego will pay \$2,340. So Diego will pay more than Kenneth.

### Lesson 5 Adding and Subtracting Fractions pp. 20–23

1. A [4.N.23]  
 2. C [4.N.23]  
 3. B [4.N.23]  
 4. A [4.N.23]  
 5. Short-response [4.N.23]  
 A.  $\frac{2}{3}$   
 B.  $\frac{1}{3}$   
 6. Extended-response [4.N.23]  
 A.  $\frac{6}{10}$   
 B.

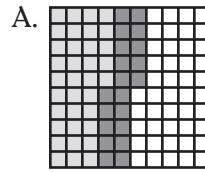


*Explanations may vary but should say something like the following:* All of the weights are smaller than  $\frac{6}{10}$  pound, so I needed to find a combination of weights that adds to  $\frac{6}{10}$ . The  $\frac{4}{10}$  and  $\frac{2}{10}$  add to  $\frac{6}{10}$ .

### Lesson 6 Adding and Subtracting Decimals pp. 24–27

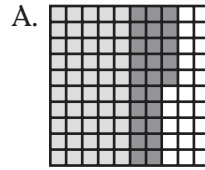
1. D [4.N.25]  
 2. B [4.N.25]

3. Short-response [4.N.25]

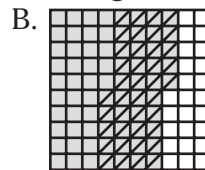


B.  $0.35 + 0.2 = 0.55$

4. Extended-response [4.N.25]



0.75 gallon



0.35 gallon; *Explanations may vary but should say something like the following:* I started with the total amount of paint, 0.75 gallon. Then I crossed out 40 squares to subtract 0.4, which is the same as 0.40. I counted the number of squares left, 35. That is the same as 0.35.

### Lesson 7 Using Line Graphs pp. 28–31

1. B [4.S.4]  
 2. B [4.S.4]  
 3. C [4.S.4]  
 4. A [4.S.4]  
 5. Short-response [4.S.4]  
 12; *Explanations may vary but should say something like the following:* At age 10, Arnold was 57 inches and at age 5, he was 45 inches. The difference is  $57 - 45 = 12$ . He grew 12 inches between ages 5 and 10.  
 6. Extended-response [4.S.4]  
 A. 4 inches  
 B. 9 P.M.; *Explanations may vary but should say something like the following:* The total amount of snow at 9 o'clock is the same as it is at 11 o'clock. That means no more snow fell after 9 o'clock.