GRADE 7
FCAT Saturday Workshop
Packet 1: ANSWERS

Fractions, Decimals, & Percents
Proportions & Similarity
Equivalent Fractions (A) Answers

Instructions: Find the missing numbers in the equivalent fractions below.

\[
\begin{array}{cccccc}
\frac{2}{5} &=& \frac{8}{20} & \frac{5}{7} &=& \frac{15}{21} & \frac{1}{8} &=& \frac{4}{32} \\
4 \times &=& 3 \times &=& 4 \times &=& 3 \times \\
\frac{8}{10} &=& \frac{32}{40} & \frac{3}{10} &=& \frac{12}{40} & \frac{1}{9} &=& \frac{2}{18} \\
4 \times &=& 4 \times &=& 2 \times &=& 2 \times \\
\frac{1}{2} &=& \frac{4}{8} & \frac{4}{6} &=& \frac{16}{24} & \frac{5}{10} &=& \frac{20}{40} & \frac{5}{6} &=& \frac{20}{24} \\
4 \times &=& 4 \times &=& 4 \times &=& 4 \times \\
\frac{1}{4} &=& \frac{2}{8} & \frac{5}{8} &=& \frac{15}{24} & \frac{1}{7} &=& \frac{3}{21} & \frac{4}{9} &=& \frac{12}{27} \\
2 \times &=& 3 \times &=& 3 \times &=& 3 \times \\
\frac{1}{6} &=& \frac{4}{24} & \frac{1}{3} &=& \frac{5}{15} & \frac{3}{7} &=& \frac{12}{28} & \frac{1}{3} &=& \frac{3}{9} \\
4 \times &=& 5 \times &=& 4 \times &=& 3 \times \\
\frac{7}{12} &=& \frac{35}{60} & \frac{1}{5} &=& \frac{2}{10} & \frac{2}{9} &=& \frac{8}{36} & \frac{2}{4} &=& \frac{10}{20} \\
5 \times &=& 2 \times &=& 4 \times &=& 5 \times \\
\end{array}
\]
Find the value of each expression in lowest terms.

<table>
<thead>
<tr>
<th>Expression</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( \frac{6}{5} \div \frac{4}{3} )</td>
<td>( \frac{9}{10} )</td>
</tr>
<tr>
<td>2. ( \frac{2}{7} \div \frac{11}{10} )</td>
<td>( \frac{20}{77} )</td>
</tr>
<tr>
<td>3. ( \frac{1}{4} \div \frac{13}{9} )</td>
<td>( \frac{9}{52} )</td>
</tr>
<tr>
<td>4. ( \frac{16}{9} \div \frac{20}{9} )</td>
<td>( \frac{4}{5} )</td>
</tr>
<tr>
<td>5. ( \frac{2}{9} \div \frac{18}{7} )</td>
<td>( \frac{7}{81} )</td>
</tr>
<tr>
<td>6. ( \frac{2}{3} \div \frac{15}{7} )</td>
<td>( \frac{14}{45} )</td>
</tr>
<tr>
<td>7. ( \frac{4}{3} \div \frac{9}{5} )</td>
<td>( \frac{20}{27} )</td>
</tr>
<tr>
<td>8. ( \frac{9}{8} \div \frac{7}{2} )</td>
<td>( \frac{9}{28} )</td>
</tr>
<tr>
<td>9. ( \frac{5}{4} \div \frac{19}{10} )</td>
<td>( \frac{25}{38} )</td>
</tr>
<tr>
<td>10. ( \frac{19}{4} \div \frac{19}{3} )</td>
<td>( \frac{3}{4} )</td>
</tr>
<tr>
<td>11. ( \frac{8}{7} \div \frac{13}{8} )</td>
<td>( \frac{64}{91} )</td>
</tr>
<tr>
<td>12. ( \frac{9}{5} \div \frac{20}{3} )</td>
<td>( \frac{27}{100} )</td>
</tr>
</tbody>
</table>
Adding Fractions (A) Answers

Find the value of each expression in lowest terms.

1. \(\frac{3}{4} + \frac{1}{16} = \frac{13}{16}\)
2. \(\frac{3}{14} + \frac{1}{3} = \frac{23}{42}\)
3. \(\frac{9}{11} + \frac{1}{11} = \frac{10}{11}\)
4. \(\frac{1}{3} + \frac{2}{17} = \frac{23}{51}\)
5. \(\frac{2}{5} + \frac{1}{10} = \frac{1}{2}\)
6. \(\frac{1}{19} + \frac{1}{2} = \frac{21}{38}\)
7. \(\frac{6}{19} + \frac{2}{3} = \frac{56}{57}\)
8. \(\frac{1}{3} + \frac{1}{6} = \frac{1}{2}\)
9. \(\frac{1}{4} + \frac{1}{2} = \frac{3}{4}\)
10. \(\frac{1}{2} + \frac{3}{16} = \frac{11}{16}\)
11. \(\frac{2}{11} + \frac{1}{2} = \frac{15}{22}\)
12. \(\frac{4}{11} + \frac{3}{8} = \frac{65}{88}\)
Subtracting Fractions (A) Answers

Find the value of each expression in lowest terms.

1. \( \frac{3}{10} - \frac{3}{20} = \frac{3}{20} \)

2. \( \frac{18}{19} - \frac{16}{19} = \frac{2}{19} \)

3. \( \frac{12}{17} - \frac{3}{17} = \frac{9}{17} \)

4. \( \frac{9}{10} - \frac{2}{5} = \frac{1}{2} \)

5. \( \frac{5}{11} - \frac{3}{11} = \frac{2}{11} \)

6. \( \frac{1}{2} - \frac{5}{16} = \frac{3}{16} \)

7. \( \frac{11}{16} - \frac{1}{4} = \frac{7}{16} \)

8. \( \frac{13}{15} - \frac{1}{3} = \frac{8}{15} \)

9. \( \frac{1}{2} - \frac{1}{8} = \frac{3}{8} \)

10. \( \frac{1}{2} - \frac{1}{20} = \frac{9}{20} \)

11. \( \frac{8}{9} - \frac{8}{9} = 0 \)

12. \( \frac{17}{20} - \frac{4}{5} = \frac{1}{20} \)
Converting Common Fractions to Decimals (A) Answers

Instructions: Write the decimal equivalent beside each fraction.

\[
\frac{2}{5} = 0.4 \quad \frac{7}{10} = 0.7 \quad \frac{3}{4} = 0.75
\]

\[
\frac{9}{20} = 0.45 \quad \frac{11}{20} = 0.55 \quad \frac{2}{5} = 0.4
\]

\[
\frac{3}{10} = 0.3 \quad \frac{9}{10} = 0.9 \quad \frac{3}{5} = 0.6
\]

\[
\frac{4}{5} = 0.8 \quad \frac{19}{20} = 0.95 \quad \frac{13}{20} = 0.65
\]

\[
\frac{13}{20} = 0.65 \quad \frac{3}{5} = 0.6 \quad \frac{1}{4} = 0.25
\]

\[
\frac{1}{2} = 0.5 \quad \frac{3}{20} = 0.15 \quad \frac{13}{20} = 0.65
\]

\[
\frac{3}{4} = 0.75 \quad \frac{1}{4} = 0.25 \quad \frac{3}{5} = 0.6
\]
Proportions

State if each pair of ratios forms a proportion.

1) \( \frac{4}{2} \) and \( \frac{20}{6} \)
   - No

2) \( \frac{3}{2} \) and \( \frac{18}{8} \)
   - No

3) \( \frac{4}{3} \) and \( \frac{16}{12} \)
   - Yes

4) \( \frac{4}{3} \) and \( \frac{8}{6} \)
   - Yes

5) \( \frac{12}{24} \) and \( \frac{3}{4} \)
   - No

6) \( \frac{6}{9} \) and \( \frac{2}{3} \)
   - Yes

Solve each proportion.

7) \( \frac{10}{k} = \frac{8}{4} \)
   - \{5\}

8) \( \frac{m}{10} = \frac{10}{3} \)
   - \{33.33\}

9) \( \frac{2}{x} = \frac{7}{9} \)
   - \{2.57\}

10) \( \frac{3}{x} = \frac{7}{10} \)
    - \{4.28\}
11) \( \frac{4}{9} = \frac{2}{x} \)  
   \{4.5\}

12) \( \frac{6}{a} = \frac{3}{8} \)  
   \{16\}

13) \( \frac{8n}{8} = \frac{8}{3} \)  
   \{2.66\}

14) \( \frac{7}{9} = \frac{a}{5} \)  
   \{3.88\}

15) \( \frac{p}{8} = \frac{13}{2} \)  
   \{52\}

16) \( \frac{3}{13} = \frac{v}{3} \)  
   \{0.69\}

17) \( \frac{10}{12} = \frac{2}{n} \)  
   \{2.4\}

18) \( \frac{11}{10} = \frac{r}{11} \)  
   \{12.1\}

19) \( \frac{x}{9} = \frac{7}{14} \)  
   \{4.5\}

20) \( \frac{a}{10} = \frac{11}{14} \)  
   \{7.85\}

21) \( \frac{v}{12} = \frac{10}{2} \)  
   \{60\}

22) \( \frac{6}{14} = \frac{5}{n} \)  
   \{11.66\}

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Proportion Word Problems

Answer each question and round your answer to the nearest whole number.

1) If you can buy one can of pineapple chunks for $2 then how many can you buy with $10?
   \[ \frac{1 \text{ can}}{2 \text{ dollars}} = \frac{x \text{ cans}}{10 \text{ dollars}} \]
   \[ x = \frac{10 \text{ dollars}}{2 \text{ dollars}} \times 1 \text{ can} = 5 \text{ cans} \]

2) One jar of crushed ginger costs $2. How many jars can you buy for $4?
   \[ \frac{1 \text{ jar}}{2 \text{ dollars}} = \frac{x \text{ jars}}{4 \text{ dollars}} \]
   \[ x = \frac{4 \text{ dollars}}{2 \text{ dollars}} \times 1 \text{ jar} = 2 \text{ jars} \]

3) One cantaloupe costs $2. How many cantaloupes can you buy for $6?
   \[ \frac{1 \text{ cantaloupe}}{2 \text{ dollars}} = \frac{x \text{ cantaloupes}}{6 \text{ dollars}} \]
   \[ x = \frac{6 \text{ dollars}}{2 \text{ dollars}} \times 1 \text{ cantaloupe} = 3 \text{ cantaloupes} \]

4) One package of blueberries costs $3. How many packages of blueberries can you buy for $9?
   \[ \frac{1 \text{ package}}{3 \text{ dollars}} = \frac{x \text{ packages}}{9 \text{ dollars}} \]
   \[ x = \frac{9 \text{ dollars}}{3 \text{ dollars}} \times 1 \text{ package} = 3 \text{ packages} \]

5) Shawna reduced the size of a rectangle to a height of 2 in. What is the new width if it was originally 24 in wide and 12 in tall?
   \[ \frac{2 \text{ in}}{12 \text{ in}} = \frac{w \text{ in}}{24 \text{ in}} \]
   \[ w = \frac{24 \text{ in}}{12 \text{ in}} \times 2 \text{ in} = 4 \text{ in} \]

6) Ming was planning a trip to Western Samoa. Before going, she did some research and learned that the exchange rate is 6 Tala for $2. How many Tala would she get if she exchanged $6?
   \[ \frac{6 \text{ Tala}}{2 \text{ dollars}} = \frac{x \text{ Tala}}{6 \text{ dollars}} \]
   \[ x = \frac{6 \text{ dollars}}{2 \text{ dollars}} \times 6 \text{ Tala} = 18 \text{ Tala} \]

7) Jasmine bought 32 kiwi fruit for $16. How many kiwi can Lisa buy if she has $4?
   \[ \frac{32 \text{ kiwi}}{16 \text{ dollars}} = \frac{x \text{ kiwi}}{4 \text{ dollars}} \]
   \[ x = \frac{4 \text{ dollars}}{16 \text{ dollars}} \times 32 \text{ kiwi} = 8 \text{ kiwi} \]

8) If you can buy four bulbs of elephant garlic for $8 then how many can you buy with $32?
   \[ \frac{4 \text{ bulbs}}{8 \text{ dollars}} = \frac{x \text{ bulbs}}{32 \text{ dollars}} \]
   \[ x = \frac{32 \text{ dollars}}{8 \text{ dollars}} \times 4 \text{ bulbs} = 16 \text{ bulbs} \]

9) One bunch of seedless black grapes costs $2. How many bunches can you buy for $20?
   \[ \frac{1 \text{ bunch}}{2 \text{ dollars}} = \frac{x \text{ bunches}}{20 \text{ dollars}} \]
   \[ x = \frac{20 \text{ dollars}}{2 \text{ dollars}} \times 1 \text{ bunch} = 10 \text{ bunches} \]

10) The money used in Jordan is called the Dinar. The exchange rate is $3 to 2 Dinars. Find how many dollars you would receive if you exchanged 22 Dinars.
    \[ \frac{3 \text{ dollars}}{2 \text{ Dinars}} = \frac{x \text{ dollars}}{22 \text{ Dinars}} \]
    \[ x = \frac{22 \text{ Dinars}}{2 \text{ Dinars}} \times 3 \text{ dollars} = 33 \text{ dollars} \]
11) Gabriella bought three cantaloupes for $7. How many cantaloupes can Shayna buy if she has $21?

9

12) Jenny was planning a trip to the United Arab Emirates. Before going, she did some research and learned that the exchange rate is 4 Dirhams for every $1. How many Dirhams would she get if she exchanged $5?

20 Dirhams

13) Castel bought four bunches of fennel for $9. How many bunches of fennel can Mofor buy if he has $18?

8

14) If you can buy one fruit basket for $30 then how many can you buy with $60?

2

Answer each question. Round your answer to the nearest tenth. Round dollar amounts to the nearest cent.

15) Asanji took a trip to Mexico. Upon leaving he decided to convert all of his Pesos back into dollars. How many dollars did he receive if he exchanged 42.7 Pesos at a rate of $5.30 = 11.1 Pesos?

$20.39

16) The currency in Argentina is the Peso. The exchange rate is approximately $3 = 1 Peso. At this rate, how many Pesos would you get if you exchanged $121.10?

40.4 Pesos

17) Mary reduced the size of a painting to a width of 3.3 in. What is the new height if it was originally 32.5 in tall and 42.9 in wide?

2.5 in

18) Molly bought two heads of cabbage for $1.80. How many heads of cabbage can Willie buy if he has $28.80?

32
Each pair of figures is similar. Find the missing side.

1) \[
\frac{12}{20} = \frac{3}{x} \quad \Rightarrow \quad x = \frac{20 \times 3}{12} = 5
\]

2) \[
\frac{x}{1} = \frac{9}{3} \quad \Rightarrow \quad x = \frac{1 \times 9}{3} = 3
\]

3) \[
\frac{x}{4} = \frac{8}{16} \quad \Rightarrow \quad x = \frac{4 \times 16}{8} = 8
\]

4) \[
\frac{5}{4} = \frac{x}{8} \quad \Rightarrow \quad x = \frac{5 \times 8}{4} = 10
\]

5) \[
\frac{14}{x} = \frac{2}{1} \quad \Rightarrow \quad x = \frac{14 \times 1}{2} = 7
\]

6) \[
\frac{6}{9} = \frac{24}{x} \quad \Rightarrow \quad x = \frac{9 \times 24}{6} = 36
\]

7) \[
\frac{10}{9} = \frac{99}{x} \quad \Rightarrow \quad x = \frac{9 \times 99}{10} = 89.1
\]

8) \[
\frac{10}{x} = \frac{100}{100} \quad \Rightarrow \quad x = \frac{10 \times 100}{100} = 10
\]
17) 
\[
\begin{array}{c}
\text{9} \\
\text{13} \\
\text{13} \\
\text{x} \\
\text{130} \\
\text{90} \\
\text{130} \\
\end{array}
\]

18) 
\[
\begin{array}{c}
\text{8} \\
\text{x} \\
\text{12} \\
\text{2} \\
\text{3} \\
\end{array}
\]

12

19) 
\[
\begin{array}{c}
\text{x} \\
\text{52} \\
\text{44} \\
\end{array}
\]

16

20) 
\[
\begin{array}{c}
\text{56} \\
\text{40} \\
\text{x} \\
\text{5} \\
\text{7} \\
\text{5} \\
\text{7} \\
\text{5} \\
\end{array}
\]

56

21) 
\[
\begin{array}{c}
\text{7} \\
\text{11} \\
\text{4} \\
\end{array}
\]

143

22) 
\[
\begin{array}{c}
\text{14} \\
\text{x} \\
\text{1} \\
\text{8} \\
\text{112} \\
\end{array}
\]

14

23) 
\[
\begin{array}{c}
\text{13} \\
\text{3} \\
\text{13} \\
\text{3} \\
\end{array}
\]

27

24) 
\[
\begin{array}{c}
\text{84} \\
\text{91} \\
\text{x} \\
\text{28} \\
\end{array}
\]

13

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Similar Figure Word Problems

Answer each question and round your answer to the nearest whole number.

1) A 6 ft tall tent standing next to a cardboard box casts a 9 ft shadow. If the cardboard box casts a shadow that is 6 ft long then how tall is it?

   4 ft

2) A telephone booth that is 8 ft tall casts a shadow that is 4 ft long. Find the height of a lawn ornament that casts a 2 ft shadow.

   4 ft

3) A map has a scale of 3 cm : 18 km. If Riverside and Smithville are 54 km apart then they are how far apart on the map?

   9 cm

4) Find the distance between Riverside and Milton if they are 12 cm apart on a map with a scale of 4 cm : 21 km.

   63 km

5) A model house is 12 cm wide. If it was built with a scale of 3 cm : 4 m then how wide is the real house?

   16 m

6) Oak Grove and Salem are 87 mi from each other. How far apart would the cities be on a map that has a scale of 5 in : 29 mi?

   15 in

7) A map has a scale of 2 in : 6 mi. If Clayton and Centerville are 10 in apart on the map then how far apart are the real cities?

   30 mi

8) A statue that is 12 ft tall casts a shadow that is 15 ft long. Find the length of the shadow that a 8 ft cardboard box casts.

   10 ft

Answer each question and round your answer to the nearest tenth.

9) A model house has a scale of 1 in : 2 ft. If the real house is 26 ft wide then how wide is the model house?

   13 in

10) A 6.5 ft tall car standing next to an adult elephant casts a 33.2 ft shadow. If the adult elephant casts a shadow that is 51.5 ft long then how tall is it?

    10.1 ft

11) If a 42.9 ft tall flagpole casts a 253.1 ft long shadow then how long is the shadow that a 6.2 ft tall woman casts?

    36.6 ft

12) Georgetown and Franklin are 9.7 in apart on a map that has a scale of 1.1 in : 15 mi. How far apart are the real cities?

    132.3 mi
MA.7.A.1.2 FORM A
Answer Section

MULTIPLE CHOICE

1. ANS: B    PTS: 1    DIF: Moderate    REF: Cs2: 6-3C, 6-3D
   STA: MA.7.A.1.2

2. ANS: D    PTS: 1    DIF: Moderate    REF: Cs2: 6-3A, 6-3B
   STA: MA.7.A.1.2

3. ANS: D    PTS: 1    DIF: Moderate    REF: Cs2: 6-3E
   STA: MA.7.A.1.2

4. ANS: A    PTS: 1    DIF: Moderate    STA: MA.7.A.1.2
   NOT: World Almanac and Book of Facts 2008 p. 147

5. ANS: D    PTS: 1    DIF: Moderate    STA: MA.7.A.1.2
   NOT: World Almanac and Book of Facts 2008 p. 147
## MULTIPLE CHOICE

<table>
<thead>
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<th>Answer</th>
<th>Points</th>
<th>Difficulty</th>
<th>Standard</th>
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<tr>
<td>1.</td>
<td>C</td>
<td>1</td>
<td>Moderate</td>
<td>MA.7.A.1.3</td>
</tr>
<tr>
<td>2.</td>
<td>C</td>
<td>1</td>
<td>Moderate</td>
<td>Cs2: 4-3A</td>
</tr>
<tr>
<td>3.</td>
<td>B</td>
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<td>Moderate</td>
<td>Cs2: 4-3A</td>
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MA.7.A.1.5 FORM A
Answer Section

MULTIPLE CHOICE

1. ANS: C               PTS: 1       DIF: Moderate       REF: Cs2: 5-3D, 5-3E
   STA: MA.7.A.1.5

2. ANS: B               PTS: 1       DIF: Moderate       REF: Cs2: 5-3D, 5-3E
   STA: MA.7.A.1.5

3. ANS: B               PTS: 1       DIF: Moderate       REF: Cs2: 5-3D, 5-3E
   STA: MA.7.A.1.5

4. ANS: C               PTS: 1       DIF: Moderate       REF: Cs2: 5-3B, 5-3C
   STA: MA.7.A.1.5

5. ANS: D               PTS: 1       DIF: Moderate       REF: Cs2: 5-3B, 5-3C
   STA: MA.7.A.1.5
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<td>1</td>
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<td>2</td>
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<td>C</td>
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### Number 1, #1

<table>
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<tr>
<td>5</td>
<td>y = 6(5)</td>
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### Number 1, #2

![Graph showing a line with points at (1,6), (2,12), (3,10), (4,24), and (5,30).]