This test covers material taught in Dimensions Math 3B.

1 Fill in the blanks.

(a) \(9 \times \boxed{} = 54\)

(b) \(8 \times 8 = \boxed{}\)

(c) \(\boxed{} \div 9 = 7\)

(d) \(81 \div \boxed{} = 9\)

2 Write > or < in each \(\bigcirc\).

(a) \(9 \times 6 \bigcirc 9 \times 7\)

(b) \(8 \times 7 \bigcirc 6 \times 8\)

(c) \(56 \div 8 \bigcirc 72 \div 9\)

3 Multiply or divide.

(a) \(96 \times 6\)

(b) \(602 \div 7\)

(c) \(64 \div 8\)

(d) \(563 \times 9\)
4 Ms. Johnson rides her bike to and from work every day. She lives 7 miles from work and works 5 days a week. Her friend gave her a ride home from work on Wednesday. How many miles did Ms. Johnson bike this week?

5 Jack baked 6 batches of cookies. There were 22 cookies in each batch. He wants to put an equal number of cookies into 9 containers. How many cookies will be in each container? How many cookies will be left over?
6 Shade \( \frac{5}{8} \) of the bar.

\[
\begin{array}{cccccc}
\text{ } & \text{ } & \text{ } & \text{ } & \text{ } & \text{ } \\
\hline
\text{ } & \text{ } & \text{ } & \text{ } & \text{ } & \text{ }
\end{array}
\]

7 (a) \( \frac{6}{8} \) and \( \frac{2}{8} \) make 1.

(b) \( \frac{7}{9} \) is more than \( \frac{2}{9} \).

(c) \( \frac{1}{5} \) is less than \( \frac{4}{5} \).

8 Write > or < in each □.

(a) \( \frac{3}{9} \) □ \( \frac{3}{5} \)

(b) \( \frac{5}{7} \) □ \( \frac{3}{7} \)

(c) \( \frac{8}{9} \) □ \( \frac{8}{15} \)

(d) \( \frac{11}{12} \) □ \( \frac{8}{12} \)
9 Camila’s birthday cake was cut into 12 equal pieces. Camila ate 3 pieces and her friends ate \( \frac{7}{12} \) of the cake. What fraction of the cake is left?

10 Find the missing numerators or denominators.

(a) \( \frac{2}{5} = \boxed{\_\_\_} \)

(b) \( \frac{3}{6} = \boxed{\_\_\_} \)

(c) \( \frac{1}{2} = \boxed{\_\_\_} \)

(d) \( \frac{2}{8} = \boxed{\_\_\_} \)
11. What sign, $>$, $<$, or $=$, goes in each $\bigcirc$?

(a) $\frac{1}{4} \bigcirc \frac{4}{3}$

(b) $\frac{2}{3} \bigcirc \frac{4}{6}$

(c) $\frac{4}{5} \bigcirc \frac{6}{7}$

(d) $\frac{4}{9} \bigcirc \frac{2}{8}$

12. Find the missing numerators or denominators.

(a) $\frac{3}{8} + \boxed{\frac{\_}{8}} = \frac{7}{8}$

(b) $\boxed{\frac{\_}{5}} + \frac{1}{5} = \frac{4}{5}$

(c) $\frac{8}{10} - \boxed{\frac{\_}{10}} = \frac{3}{10}$

(d) $\boxed{\frac{\_}{6}} - \frac{2}{6} = \frac{1}{6}$
13 Add or subtract. Write your answer in simplest form.

(a) \( \frac{1}{10} + \frac{5}{10} \)

(b) \( \frac{5}{9} + \frac{1}{9} \)

(c) \( \frac{4}{6} - \frac{2}{6} \)

(d) \( \frac{9}{10} - \frac{1}{10} \)

14 Diego used \( \frac{1}{4} \) cup of white sugar and \( \frac{2}{4} \) cup of brown sugar to bake cookies. How much sugar did he use altogether?
Fill in the blanks.

(a) \(105 \text{ cm} = \underline{ \hspace{1cm} } \text{ m} \underline{ \hspace{1cm} } \text{ cm}\)

(b) \(3 \text{ m} \ 55 \text{ cm} = \underline{ \hspace{1cm} } \text{ cm}\)

(c) \(2,020 \text{ m} = \underline{ \hspace{1cm} } \text{ km} \underline{ \hspace{1cm} } \text{ m}\)

(d) \(3,008 \text{ m} = \underline{ \hspace{1cm} } \text{ km} \underline{ \hspace{1cm} } \text{ m}\)

(e) \(1 \text{ km} \ 55 \text{ m} = \underline{ \hspace{1cm} } \text{ m}\)

(f) \(3 \text{ L} \ 22 \text{ mL} = \underline{ \hspace{1cm} } \text{ mL}\)

(g) \(2,500 \text{ mL} = \underline{ \hspace{1cm} } \text{ L} \underline{ \hspace{1cm} } \text{ mL}\)

(h) \(5,520 \text{ g} = \underline{ \hspace{1cm} } \text{ kg} \underline{ \hspace{1cm} } \text{ g}\)

(i) \(1 \text{ kg} \ 480 \text{ g} = \underline{ \hspace{1cm} } \text{ g}\)

Subtract.

(a) \(1 \text{ m} \ − \ 25 \text{ cm} = \underline{ \hspace{1cm} } \text{ cm}\)

(b) \(3 \text{ km} \ − \ 2 \text{ km} \ 30 \text{ m} = \underline{ \hspace{1cm} } \text{ m}\)

(c) \(9 \text{ km} \ − \ 4 \text{ km} \ 330 \text{ m} = \underline{ \hspace{1cm} } \text{ km} \underline{ \hspace{1cm} } \text{ m}\)

(d) \(8 \text{ m} \ − \ 2 \text{ m} \ 51 \text{ cm} = \underline{ \hspace{1cm} } \text{ m} \underline{ \hspace{1cm} } \text{ cm}\)
17. Wei walked 1 km 320 m to the library. She then walked 590 m to the park. How far did she walk altogether?

18. The weight of a bag of flour is 1 kg 500 g. The weight of a bag of sugar is 1 kg 814 g. What is the weight of the two bags altogether?
19  Jackie had 9 L 350 mL of paint.  
She used 1 L 220 mL to paint her room and 2 L 450 mL to paint her kitchen.  
How much paint does she have left?

20  How long is the radius and diameter of each circle?

(a)  
\[
\begin{tikzpicture}
  \draw (0,0) circle (1cm);
  \draw (0,0) -- (1,0);
  \draw (0,0) -- (0,1);
  \node at (0.5,0.5) {23 cm};
\end{tikzpicture}
\]

(b)  
\[
\begin{tikzpicture}
  \draw (0,0) circle (3cm);
  \draw (0,0) -- (3,3);
  \draw (0,0) -- (-3,3);
  \draw (0,0) -- (-3,-3);
  \draw (0,0) -- (3,-3);
  \node at (0,0) {78 cm};
\end{tikzpicture}
\]
(a) List the angles in order from smallest to largest.

(b) Which angle is a right angle?

(c) Which angles are larger than a right angle?

(d) Which angles are smaller than a right angle?

Draw the following shapes:

(a) A triangle with two equal angles

(b) A shape that is not a quadrilateral

(c) A rhombus with no right angles

(d) A quadrilateral with only one right angle.
23. Draw three different rectangles, each with an area of 18 square units. Find the perimeter of each rectangle.

24. Find the area and perimeter of rectangles with the following dimensions.

   (a) Length: 8 ft
       Width: 12 ft

   (b) Length: 52 cm
       Width: 8 cm

25. Find the area of the shaded figure in square units.
26. Find the area and perimeter of the two rectangles.

(b) Which rectangle has a greater area?

(c) Which rectangle has a greater perimeter?

27. Alex wants to tile the floor of his bathroom. His bathroom is 8 ft long and 5 ft wide. The tiles cost $9 per square foot. How much will it cost to tile his bathroom?
28 Fill in the blanks.

(a) \(70 \text{ min} = \underline{\phantom{0}} \text{ h} \underline{\phantom{0}} \text{ min}\)

(b) \(1 \text{ h} 7 \text{ min} = \underline{\phantom{0}} \text{ min}\)

(c) \(280 \text{ s} = \underline{\phantom{0}} \text{ min} \underline{\phantom{0}} \text{ s}\)

(d) \(3 \text{ min} 22 \text{ s} = \underline{\phantom{0}} \text{ s}\)

(e) \(18 \text{ days} = \underline{\phantom{0}} \text{ weeks} \underline{\phantom{0}} \text{ days}\)

(f) \(1 \text{ week} 4 \text{ days} = \underline{\phantom{0}} \text{ days}\)

29 How much time passes from…

(a) \(7:30 \text{ p.m. to 5:00 a.m.}\)?

(b) \(11:15 \text{ a.m. to 4:10 p.m.}\)?

(c) \(7:25 \text{ a.m. to 11:55 a.m.}\)?
30 What time is it...

(a) 50 minutes before 11:45 a.m.?

(b) 1 hour and 52 minutes before 11:45 a.m.?

(c) 50 minutes after 11:45 a.m.?

(d) 1 hour and 52 minutes after 11:45 a.m.?

31 Dinner was ready at 6:15 p.m.
Andrei spent 1 hour and 20 minutes preparing the meal.
What time did he begin preparing the meal?
Fill in the blanks.

(a) $0.75 + 0.70 = $\_

(b) $24.65 + 0.95 = $\_

(c) $12.72 + 14.86 = $\_

(d) $44.21 - 32.80 = $\_

Mario had two twenty-dollar bills.
He purchased a tennis racket for $24.78 and a can of tennis balls for $9.95.
How much change did he receive?

Veronica earned $68 dollars a week for 7 weeks.
She then spent $37.88 on a pair of pants and $21.90 on a hat.
How much money did she have left?
1. (a) 6  
   (b) 64  
   (c) 63  
   (d) 9

2. (a) <  
   (b) >  
   (c) <

3. (a) 576  
   (b) 86  
   (c) 8  
   (d) 5,067

4. 63 miles

5. 14 cookies with 6 left over

6. 

7. (a) 2  
   (b) 5  
   (c) 3

8. (a) <  
   (b) >  
   (c) >

9. $\frac{2}{12}$ or $\frac{1}{6}$

10. (a) 6  
    (b) 18  
    (c) 5  
    (d) 4

11. (a) <  
    (b) =  
    (c) <  
    (d) >

12. (a) 4  
    (b) 3  
    (c) 5  
    (d) 3

13. (a) $\frac{3}{5}$  
    (b) $\frac{2}{3}$  
    (c) $\frac{1}{3}$  
    (d) $\frac{4}{5}$

14. $\frac{3}{4}$ cup

15. (a) 1; 5  
    (b) 355  
    (c) 2; 20  
    (d) 3; 8  
    (e) 1,055  
    (f) 3,022  
    (g) 2; 500  
    (h) 5; 520  
    (i) 1,480
16. (a) 75  (b) 970  (c) 4; 670  (d) 5; 49
17. 1 km 910 m
18. 3 kg 314 g
19. 5 L 680 mL
20. (a) Radius: 23 cm  
    Diameter: 46 cm  
(b) Radius: 39 cm  
    Diameter: 78 cm
21. (a) f, e, b, c, a, d  
(b) c  
(c) a, d  
(d) b, e, f
22. Answers will vary. Example answers provided.
   (a) \[\text{\ 图形1} \]  
   (b) \[\text{\ 图形2} \]  
   (c) \[\text{\ 图形3} \]  
   (d) \[\text{\ 图形4} \]
23.  
   \[\begin{array}{c}
   1 \\
   9 \\
   2 \\
   6 \\
   3 \\
   \end{array} \]
   Perimeter: 38 units  
   Perimeter: 22 units  
   Perimeter: 18 units
24. (a) Area: 96 ft\(^2\); Perimeter: 40 ft  
(b) Area: 416 ft\(^2\); Perimeter: 120 ft
25. 14 square units
(a) Rectangle A:
Area: 14 ft$^2$; Perimeter: 18 ft
Rectangle B:
Area: 16 ft$^2$; Perimeter: 16 ft
(b) Rectangle B has a greater area.
(c) Rectangle A has a greater perimeter.

$360$

(a) 1; 10  
(b) 67
(c) 4; 40  
(d) 202
(e) 2; 4  
(f) 11

$9\text{ h }30\text{ min}$
(b) $4\text{ h }55\text{ min}$
(c) $4\text{ h }30\text{ min}$

(a) 10:55 a.m.
(b) 9:53 a.m.
(c) 12:35 p.m.
(d) 1:37 p.m.

$4:55\text{ p.m.}$