Dimensions Math
Placement Test 5B

This test covers material taught in Dimensions Math 5B.

1 In the number 153.936:

(a) The digit _____ is in the tenths place.

(b) The value of the digit in the thousandths place is _____.

(c) The value of the digit in the ones place is _____ times the value of the digit in the hundredths place.

2 Write the following numbers in expanded form.

(a) 0.821

(b) 302.05

3 Multiply or divide.

(a) 0.1 × 100 = ⬚

(b) 0.074 × 1,000 = ⬚

(c) 0.5 ÷ 100 = ⬚

(d) 600 ÷ 0.01 = ⬚

4 Express each decimal as a fraction or mixed number in simplest form.

(a) 0.004

(b) 7.625

5 Write >, <, or = in each ( ).

(a) 0.186 ( ) $\frac{268}{1,000}$

(b) 4.37 ( ) 4.370

(c) 0.14 + 0.8 ( ) 0.732 − 0.5

(d) 0.12 × 0.5 ( ) $\frac{6}{10}$

(e) 13.6 + 6.864 ( ) 20.6 − 0.136

(f) 5.46 − 0.263 ( ) $5\frac{9}{40}$

6 Round each number to the second decimal place, to the first decimal place, and to a whole number.

Decimal	Second Decimal Place	First Decimal Place	Whole Number
0.674			
83.499			

7 Fill in each blank with a whole number or a decimal.

(a) 0.7 m = _____ cm

(b) 251 mm = _____ cm

(c) 3 kg 18 g = _____ kg

(d) 10.83 L = _____ L _____ mL

8 Multiply or divide.

(a) 3.8 × 47 = _____

(b) 8.7 × 1.6 = _____

(c) 39.33 ÷ 19 = _____

(d) 4 ÷ 0.02 = _____

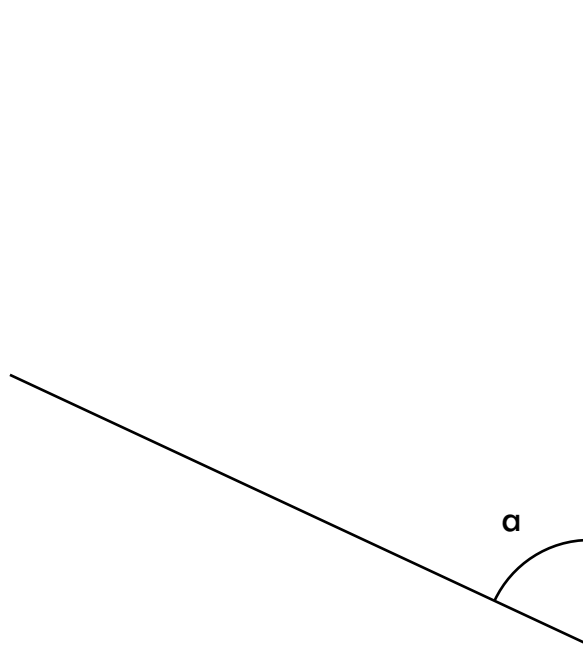**9** Divide. Express the quotients correct to the second decimal place.
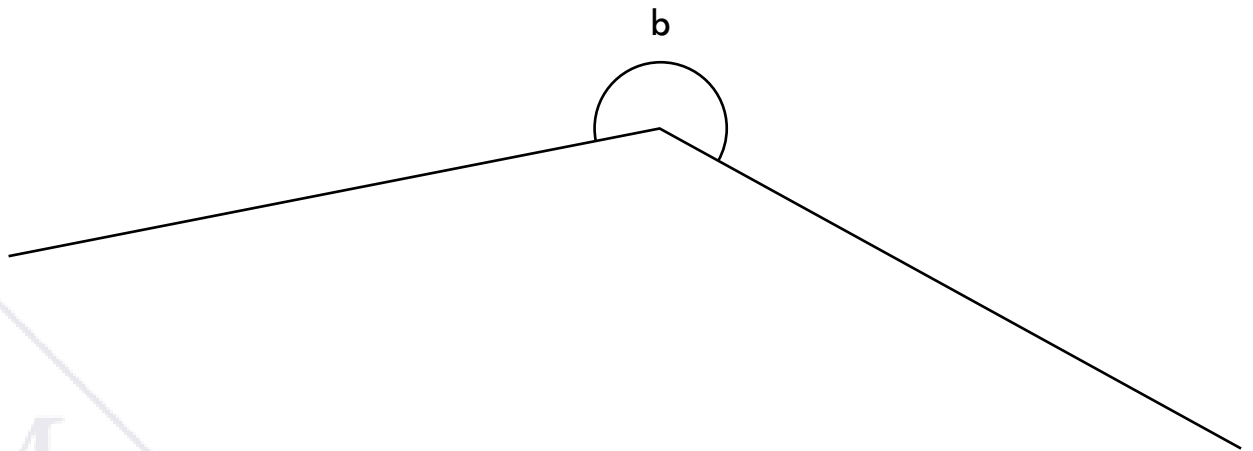
(a) 6 ÷ 0.07

(b) 70 ÷ 2.4

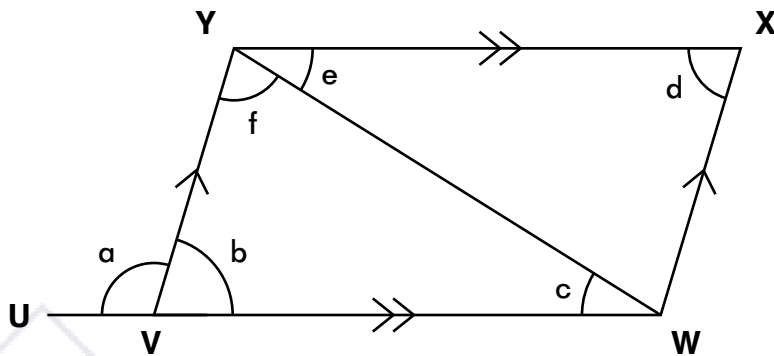**10** Find the measure of each angle with a protractor.

(a)

a

(b)

b

11 Draw a 300° angle.

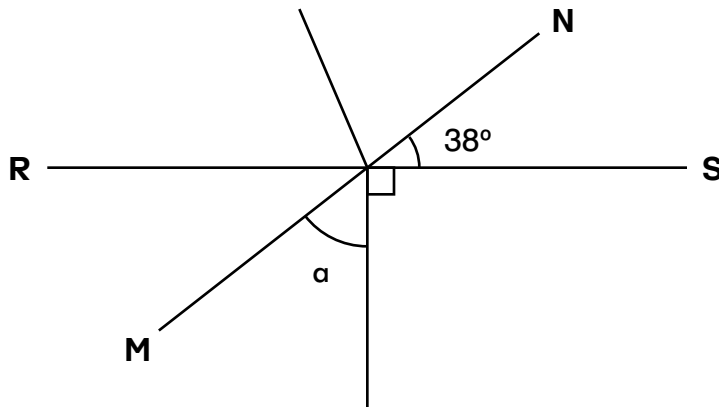**12** VWXY is a parallelogram. UW is a straight line. Fill in the blanks.

(a) ∠a = ∠f + ∠_____

(b) ∠b = ∠_____

(c) ∠c = 180° − ∠b − ∠_____

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13 Find the unknown marked angle in each figure.
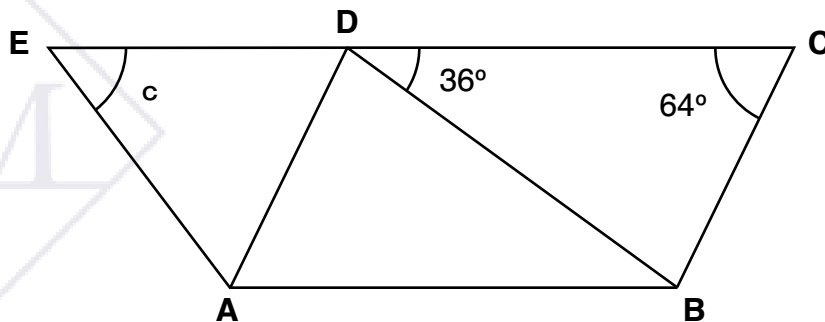
(a) MN and RS are straight lines.

(b) LMOP is a quadrilateral. LN is a straight line.
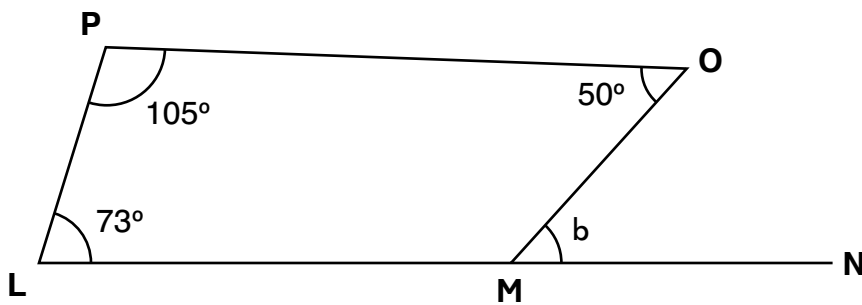
(c) ABCD is a parallelogram. ADE is an isosceles triangle with AD = ED. EC is a straight line.

14 Find the average of each set of numbers.

(a) 38, 17, and 23

(b) 0.6, 0.8, 0.5, and 0.7

15 A bakery sold an average of 74 cakes each day last week. How many cakes did the bakery sell on Friday?

| Day	Number of Cakes
Sunday	109
Monday	29
Tuesday	0
Wednesday	44
Thursday	33
Friday	?
Saturday	208

16 The line plot shows how far some of Jenna's friends live from her house to the nearest fourth of a mile.

Distance Jenna's Friends Live From Her House

Distance (miles)
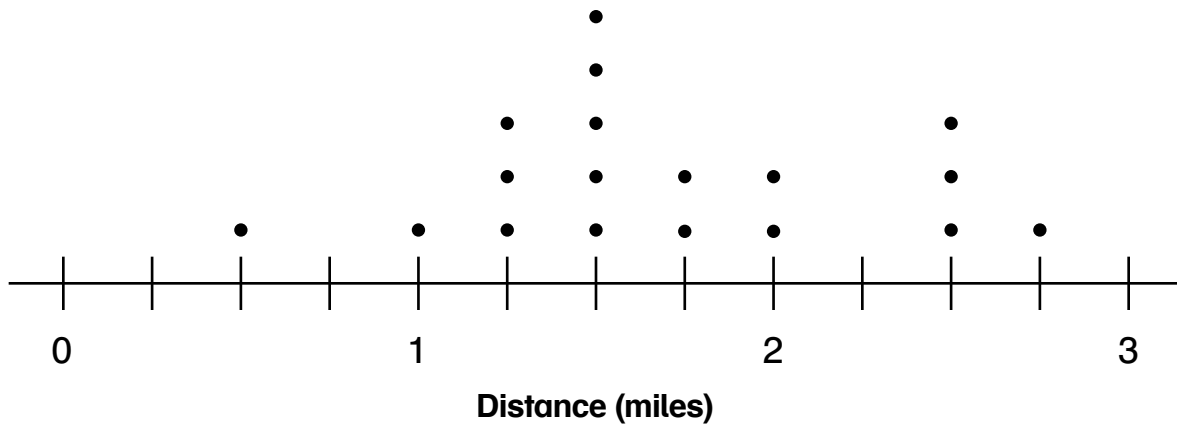
(a) What is the difference between the greatest distance and the least distance her friends live from her house?

(b) Where is most of the data clustered?

(c) What fraction of Jenna's friends live more than $1\frac{3}{4}$ mi from her house? Express the answer in simplest form.

(d) Find the average distance from Jenna's house of her friends who live less than $1\frac{1}{2}$ miles from her house.

**17** The following coordinate graph is drawn on 1-cm graph paper.
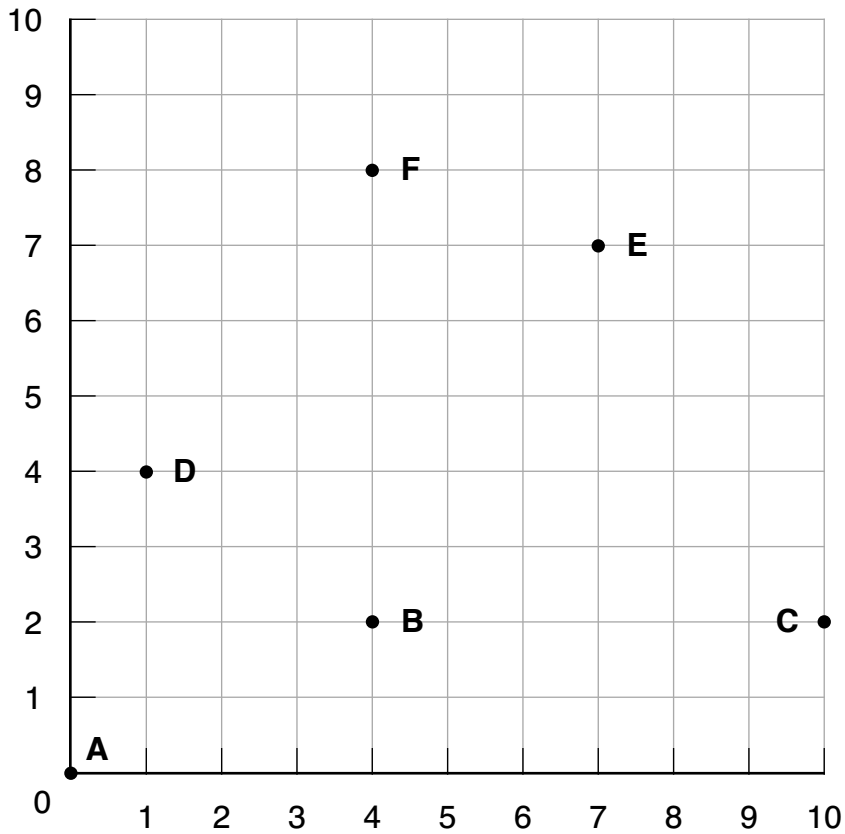
(a) Point F is _____ units to the right of the vertical axis, and _____ units above the horizontal axis.

(b) Which point is located at (10, 2)?

(c) Plot Point H (2, 10) on the graph.

(d) Three points connect to form an isosceles triangle on the graph. What is the area of this triangle?

18 (a) Complete the table below for the side length and perimeter of squares.

Side length (cm)	1	2	3	4	5	6
Perimeter (cm)	4					

(b) When the side increases by 1 cm, the perimeter increases by _____ cm.

(c) Plot the points shown in the table on the following graph.
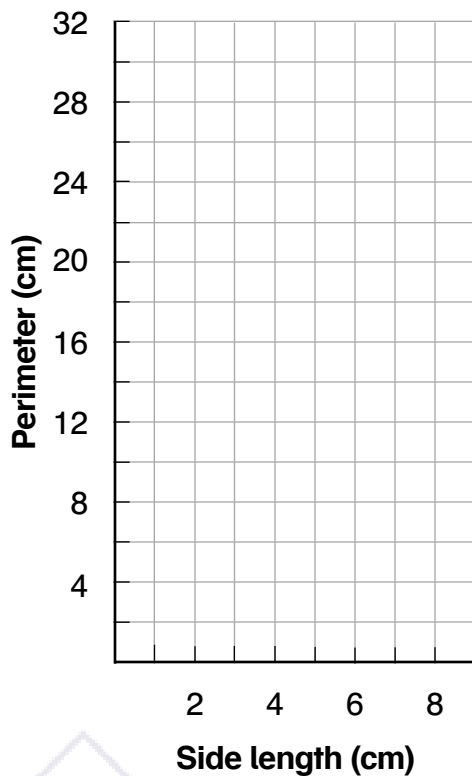
(d) Join the points in the graph. Then find the perimeter when the side length is 5.5 cm.

19 Write each ratio in simplest form.

(a) 48 : 6

(b) 18 : 45 : 81

20 There are $\frac{3}{5}$ as many children as adults at a soccer game. What is the ratio of adults to children at the game?

21 The ratio of number of red balls to blue balls to green balls in a ball pit is 6 : 2 : 3. There are 45 more red balls than green balls. What is the number of blue balls in the pit?

22 6 kg of nuts costs $18. How much does 2.5 kg of nuts cost?

23 A robot can run 25 miles in 100 minutes. How many minutes does it take the robot to run 1 mile?

24 The table shows the taxi rates in a city.

Initial Charge	$2.50
Each $\frac{1}{2}$ mile	$1.00

(a) How much does it cost to ride 10 miles in a taxi?

(b) Taylor paid $8.50 for a taxi ride. How many miles did she ride?

25 Express each of the following as a percentage.

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

(b) 0.01

(c) 7 out of 25

26 Express each percentage as a decimal and as a fraction in simplest form.

	Decimal	Fraction
5%		
34%		

27 A basketball team scored 80 points in a game. The team scored 55% of the points in the second half. How many points did they score in the first half of the game?

28 The regular price of a T-shirt is $10 at a store. Last week, all the T-shirts were on sale at a 15% discount. Sam bought some shirts at the discounted price and saved $6. How many T-shirts did Sam buy?

Answer Key

1 (a) 9
(b) 0.006
(c) 100

2 (a) 0.8 + 0.02 + 0.001
(b) 300 + 2 + 0.05

3 (a) 10   (b) 74
(c) 0.005   (d) 60,000

4 (a) $\frac{1}{250}$

(b) $7\frac{5}{8}$

5 (a) <   (b) =
(c) >   (d) <
(e) =   (f) <

6

Decimal	Second Decimal Place	First Decimal Place	Whole Number
0.674	**0.67**	**0.7**	**1**
83.499	**83.50**	**83.5**	**83**

7 (a) 70   (b) 25.1
(c) 3.018   (d) 10; 830

8 (a) 178.6   (b) 13.92
(c) 2.07   (d) 200

9 (a) 85.71
(b) 29.17

10 (a) 65°
(b) 220°

11 Orientation of angle may vary.

12 (a) c
(b) d
(c) f

13 (a) 52°
(b) 48°
(c) 58°
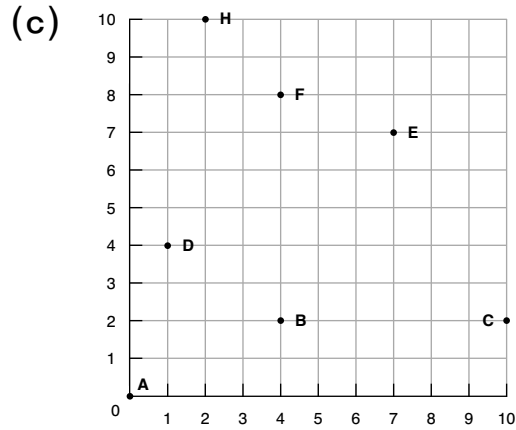
14 (a) 26
(b) 0.65

15 95

16 (a) $2\frac{1}{4}$ mi   (b) $1\frac{1}{2}$ mi
(c) $\frac{1}{3}$ (d) $1\frac{1}{20}$ mi
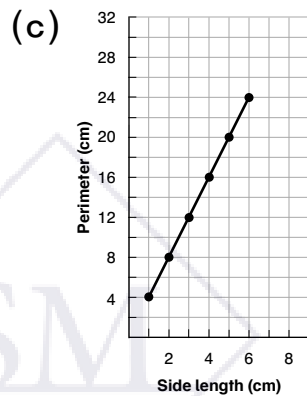
Answer Key

17 (a) 4; 8

(b) C

(c)

(d) 15 cm²

(BCE is the isocesles triangle)

18 (a)

Side length (cm)	1	2	3	4	5	6
Perimeter (cm)	4	8	12	16	20	24

(b) 4

(c)

(d) 22 cm

19 (a) 8 : 1

(b) 2 : 5 : 9

20 5 : 3

21 6 − 3 = 3
3 units = 45
1 unit = 15
2 units = 30
30

22 $7.50

23 4 min

24 (a) $22.50
(b) 3 miles

25 (a) 75%
(b) 1%
(c) 28%

26

	Decimal	Fraction
5%	0.05	$\frac{1}{20}$
34%	0.34	$\frac{17}{50}$

27   36

28   4