Placement Test for *Math in Focus* 5B

1. Consider the number 15.275. Then answer the questions.

   a. What digit is in the tenths place? _____

   b. What digit is in the hundredths place? _____

   c. What is the difference between this number and 15.2? _____

2. Solve using mental math.

   a. 0.25 X 100 = _____   b. 0.009 X 1000 = _____

   c. 9.37 ÷ 100 = _____   d. 0.005 ÷ 0.01 = _____

   e. 300 X 0.7 = _____   f. 140 ÷ 0.07 = _____

3. A rope is 10 meters long. If it were cut into 4 equal pieces, how long would each piece be? Write your answer as a decimal number.
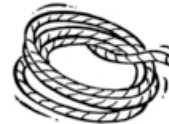
   Each piece would be _____ meters long.

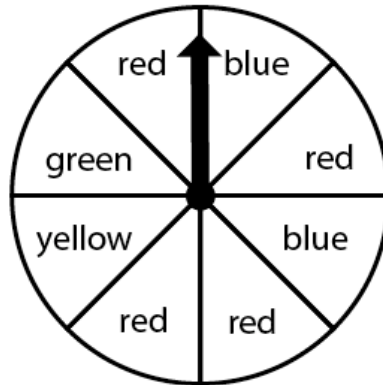4. 300 animals are in the shelter. 35% of the animals are cats. How many cats are there in the shelter?

   There are _____ cats.

5. Mr. Lee earns $3,500 a month. He spends 50% of it, saves 30% of the remainder, and the rest is spent on rent. How much is his rent?
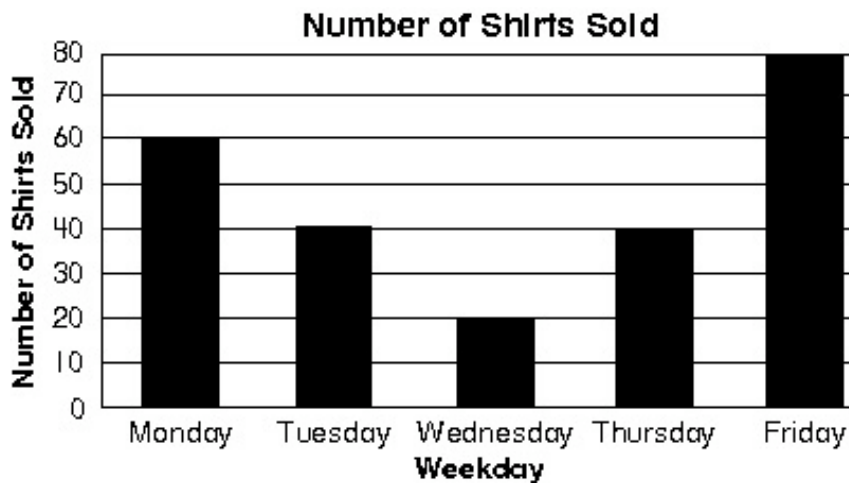
   His rent is $_____.

6. Look at the spinner. Express each probability as a fraction in its simplest form.

a. The probability of landing on red is _____.

b. The probability of landing on blue is _____.

c. The probability of landing on yellow is _____.

7. The graph shows the number of shirts a store sold over five days.

a. How many shirts were sold on Tuesday? _____

b. How many more shirts were sold on Friday than Wednesday? _____

c. What is the total number of shirts sold? _____

d. What is the average number of shirts sold each day? _____
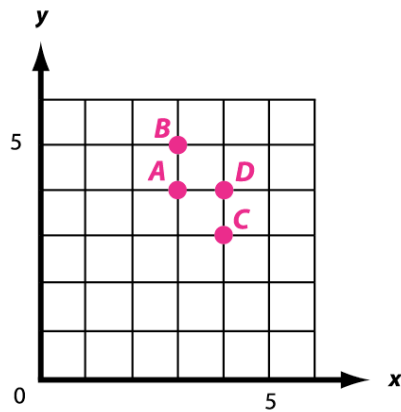
8. Find the equivalent measures.

    a. 0.6 m = _____ cm   b. 5.25 lb = _____ oz

    c. 45 ml = _____ L   d. 0.25 feet = _____ inches

9. What ordered pairs are represented on this grid?

    a. B = _____   b. A = _____

    c. D = _____   d. C = _____

10. The length of one side of a cube is 2 yards. What is its volume in cubic feet?

    _____
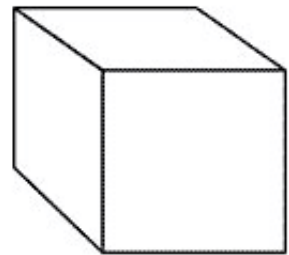
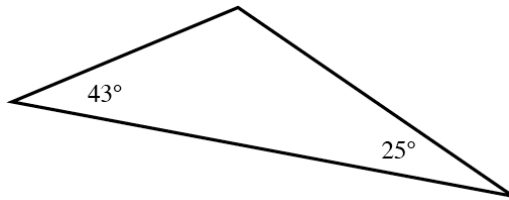11. Name the right angle.

∠ _____
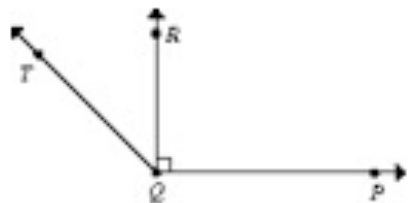
12. Find the measure of ∠P.
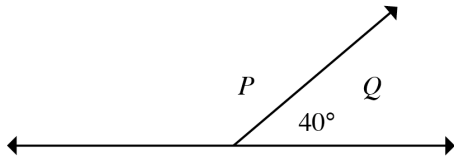
∠P = _____

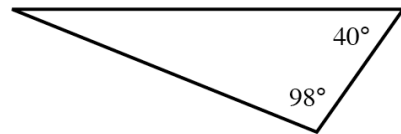13. Find the measure of ∠z.
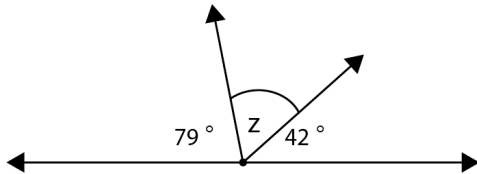
∠z = _____

14. Find the unknown angle measures in these triangles.

a. _____

b. _____
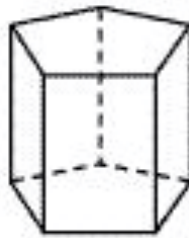
15. Study this solid shape. Then answer the questions.
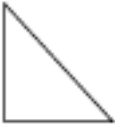

a. How many faces does this shape have? _____

b. How many vertices does this shape have? _____

c. What shape is the base of this solid shape? _____

d. What shape are its side faces? _____

16. Draw lines to match the shapes with their names.

△	•	• rhombus
⬡	•	• octagon
◺	•	• hexagon
◇	•	• right triangle
⏢	•	• scalene triangle
⯃	•	• trapezoid

17. Which of these solid shapes does not have any flat surfaces? Circle your answer.

cone   cylinder   sphere   prism

18. How many cubes make up this solid shape?
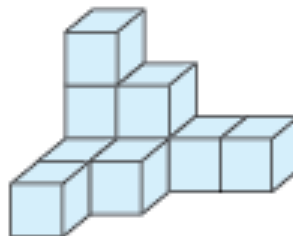
_____ cubes make up this solid shape.

19. Which of the statements below is true?   _____

Shape 1.   Shape 2.

a. Shape 1 is made up of more cubes than Shape 2.

b. Shape 2 is made up of more cubes than Shape 1.

c. Shape 1 and Shape 2 are made up of the same number of cubes.
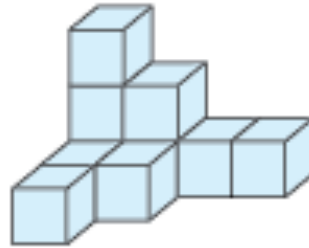
20. Draw lines to match the unfolded patterns with the shapes they form.

21. Charlotte is *x* years old. Van is 3 times as old as Charlotte. Selena is 2 years older than Van.

    a. Express Selena's age in terms of *x*.

    _____ years

    b. If Charlotte is 4 years old, how old is Selena? _____

22. Simplify the following.

    a. $19a + 14 - 7a - 5$ _____

    b. $y + 7y - 2y$ _____

23. Find the value of the expression $174 - 2y^2$ when *y* is 9. _____

24. Solve.

    a. $(-4) + (-33) =$ _____   b. $14 + (-5) =$ _____

    c. $(-27) + 9 =$ _____   d. $65 + (-25) + 13 =$ _____

    e. $55 - 75 =$ _____   f. $-8 + 64 - 41 =$ _____

25. Express the following as percentages.

    a. $0.49 =$ _____%   b. $\frac{3}{15} =$ _____%   c. 225 out of 900 = _____%

26. Find the missing numbers in this set of equivalent ratios.

$4 :$ _____ $: 6 =$ _____ $: 9 : 18$

Math in Focus 5B Placement Test Answer Key

Point values are indicated in parentheses next to each item number; 100 points total.

1. (6 points)
   a. 2
   b. 7
   c. 0.075

2. (6 points)
   a. 25
   b. 9
   c. 0.0937
   d. 0.5
   e. 210
   f. 2,000

3. (2 points)
   Each piece would be 2.5 meters long.

4. (2 points)
   There are 105 cats.

5. (2 points)
   His rent is $1,225.

6. (6 points)
   a. $\frac{1}{2}$
   b. $\frac{1}{4}$
   c. $\frac{1}{8}$

7. (4 points)
   a. 40
   b. 60
   c. 240
   d. 48

8. (8 points)
   a. 60
   b. 84
   c. 0.045
   d. 3

9. (8 points)
   a. 3, 5
   b. 3, 4
   c. 4, 4
   d. 4, 3

10. (2 points)
    216 ft.^{3}

11. (2 points)
    ∠ RQP or ∠PQR

12. (2 points)
    140°

13. (2 points)
    59°

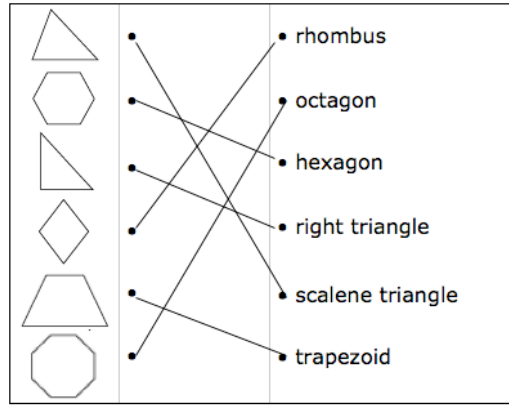14. (4 points)
    a. 112°
    b. 42°

15. (8 points)
    a. 7
    b. 10
    c. pentagon
    d. rectangle

16. (6 points)
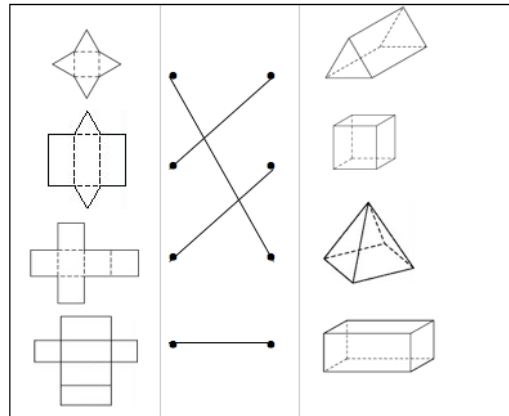

17. (2 points)
    sphere

18. (2 points)
    10 cubes make up this solid shape.

19. (2 points)
    c

20. (2 points)

21. (2 points)
    a. $(3x + 2)$ years
    b. 14

22. (6 points)
    a. $12a + 9$
    b. $6y$

23. (2 points)
    12

24. (6 points)
    a. −37
    b. 9
    c. −18
    d. 53
    e. −20
    f. 15

25. (6 points)
    a. 49%
    b. 20%
    c. 25%

26. (4 points)
    4 : 3 : 6 = 12 : 9 : 18