

Summer Review Packet
For those entering Algebra II

In preparation for Algebra II, you must complete this packet during the summer break. The purpose of this work is to help keep your math skills fresh and make sure that you do not forget fundamental concepts during these months. The packet is short, but the benefit that it can have as you continue along with your mathematics education, preparing for PSATs and SATs, and even getting ready for your science and other classes is invaluable.

Most of this packet will be review, however some questions may contain concepts that are new to you. This is okay! Part of being successful in mathematics comes down to being able and willing to explore new ideas, problem solve, and try to figure things out. If you see something that you think may be new to you, try to work it out from what you know, or do a little bit of research and see what you can come up with. Don't worry – you won't be marked down for something that is new to you.

This packet will be due on the first day of class next year and will count as your first homework grade. Have a great summer!

- 1 In one high school, 30 of the school's 800 students work on the school paper. What percent of the students work on the paper?
- A 2.4%
 - B 24%
 - C 3.75%
 - D 37.5%
- 2 What is 15% of 86?
- A 5.7
 - B 7.5
 - C 12.9
 - D 9.12
- 3 1.8 is 72% of what number?
- A 1.3
 - B 3.1
 - C 5.2
 - D 2.5
- 4 What percent of 5 is 40?
- A 800%
 - B 125%
 - C 12.5%
 - D 80%
- 5 4% of what number is 34?
- A 850
 - B 136
 - C 85
 - D 13.6

Review: Number and Operations Strand

- 6 Simplify. Write your answer in simplest form.

$$6\frac{3}{4} - 4\frac{11}{12}$$

- A $1\frac{2}{3}$
- B $1\frac{5}{6}$
- C $2\frac{5}{6}$
- D 3

- 7 Simplify. Write your answer in simplest form.

$$\frac{7}{12} + \frac{11}{12}$$

- A $1\frac{1}{2}$
- B $\frac{3}{4}$
- C $1\frac{2}{3}$
- D $\frac{18}{12}$

- 8 Simplify. Write your answer in simplest form.

$$\frac{2}{5} \div \frac{1}{8}$$

- A $\frac{1}{20}$
- B $\frac{5}{16}$
- C $3\frac{1}{5}$
- D 20

Review: Number and Operations Strand

- 9 Simplify. Write your answer in simplest form.

$$4\frac{2}{3} \cdot 5\frac{1}{6}$$

- A $9\frac{5}{8}$
- B $20\frac{1}{9}$
- C 23
- D $24\frac{1}{9}$

- 10 Find the unit rate of the ratio.

150 mi in 3 h

- A 150 mi/h
- B 30 mi/h
- C 50 mi/h
- D 147 mi/h

- 11 Find the unit rate of the ratio.

\$9.45 for 5 lb

- A \$9.45/lb
- B \$4.45/lb
- C \$1.89/lb
- D \$9.40/lb

- 12 Solve the proportion. Round to the nearest tenth where necessary.

$$\frac{5}{6} = \frac{r}{42}$$

- A 35
- B 7
- C 41
- D 45

- 13 Solve the proportion. Round to the nearest tenth where necessary.

$$\frac{53}{2} = \frac{18}{x}$$

- A 32
- B 0.7
- C 0.9
- D 1.0

- 14 Solve the proportion. Round to the nearest tenth where necessary.

$$\frac{15}{a} = \frac{30}{98}$$

- A 49
- B 83
- C 2
- D 0.5

- 15 Find $-7 + (-4)$.

- A 11
- B -11
- C 3
- D -3

- 16 Find $-26.3 + 8.9$.

- A 35.2
- B -35.2
- C 17.4
- D -17.4

17 Simplify.

$$-\frac{3}{4} + \left(-\frac{1}{2}\right)$$

- A $-1\frac{1}{4}$
- B $1\frac{1}{4}$
- C $-\frac{1}{4}$
- D $\frac{1}{4}$

18 Simplify.

$$(5 + 3) \div 2 + (5^2 - 3)$$

- A $\frac{1}{3}$
- B 11
- C 26
- D 38

19 Simplify.

$$8 \div (9 - 7) + (13 \div 2)$$

- A 10.5
- B 7
- C 0.5
- D 22.5

20 Write 267,000 in scientific notation.

- A 26.7×10^4
- B 2.67×10^4
- C 2.67×10^5
- D 2.67×10^6

Review: Number and Operations Strand

21 Write 0.0000325 in scientific notation.

- A 325×10^{-7}
- B 3.25×10^{-5}
- C 3.25×10^{-6}
- D 3.25×10^5

22 Simplify. Write the answer in scientific notation.

$$2.5(6 \times 10^3)$$

- A 1.5×10^3
- B 1.5×10^4
- C 1.5×25^4
- D 15,000

23 Simplify. Write the answer in scientific notation.

$$0.4(2 \times 10^{-9})$$

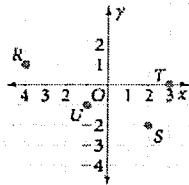
- A 8×10^{-10}
- B 8×10^9
- C 0.8×10^{-9}
- D 80×10^{-10}

24 Which symbol will make the statement true?

$$\sqrt{6} \text{ ? } 2.\bar{3}$$

- A <
- B >
- C =

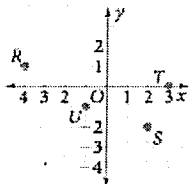
1 Choose the coordinates of the point.



U

- A (4, 1)
- B (-1, 1)
- C (1, -1)
- D (-1, -1)

2 Choose the coordinates of the point.



T

- A (3, 0)
- B (0, 3)
- C (0, -3)
- D (-3, 0)

3 Estimate the sum. Choose the mixed number that is closest to the estimate.
 $5.5 + 4.2$

- A $9\frac{2}{3}$
- B $9\frac{1}{6}$
- C $8\frac{3}{5}$
- D $8\frac{1}{2}$

- 4 **Suppose you walk 2 miles in 35 minutes.**

Write a proportion to find how far you would walk in an hour if you were to continue at the same rate.

A $\frac{2}{35} = \frac{1}{x}$

B $\frac{2}{35} = \frac{x}{1}$

C $\frac{2}{35} = \frac{x}{60}$

D $\frac{2}{35} = \frac{60}{x}$

- 5 **Suppose you walk 2 miles in 35 minutes.**

Solve the proportion you found in the previous exercise.

A about 17.5 miles

B about 0.057 miles

C about 3.43 miles

D about 10.50 miles

- 6 Simplify $3 \cdot 6 - 4^2 \div 2$.

A 1

B 11

C 10

D 4

- 7 Simplify $5(4)(-2)$.

A 10

B -2

C -40

D -10

Entry-Level Assessment

- 8 What is the volume of a cylinder that is 15-m tall and has a radius of 3 m. Use 3.14 for π , and round your answer to the nearest cubic meter.

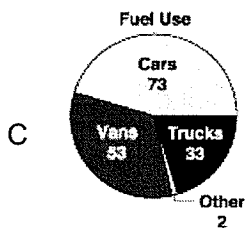
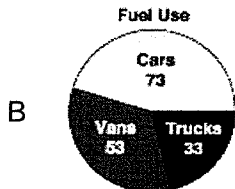
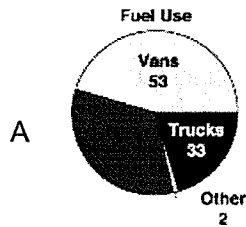
- A 141 m³
- B 283 m³
- C 339 m³
- D 424 m³

- 9 Which circle graph best represents the set of data?

Fuel Used by Types of Vehicles
(billions of gallons)

Cars	Vans, Pickups, SUVs	Trucks	Other
73	53	33	2

Source: U.S. Census Bureau



10 Simplify $(7p^{-3})(-6p^5q^{-2})$. Use only positive exponents.

A p^2q^{-2}

B $\frac{42p^2}{q^2}$

C $\frac{42}{p^2q^2}$

D $\frac{p^2}{q^2}$

11 Simplify.

$$\sqrt{\frac{84}{121}}$$

A $\frac{2\sqrt{21}}{11}$

B $\frac{9}{11}$

C $\frac{4\sqrt{21}}{11}$

D $\frac{2\sqrt{21}}{10\sqrt{2}}$

12 You invest \$2000 in a bank account. Find the amount of simple interest you earn in two years for an annual interest rate of 5.5%. Use the formula for simple interest $I = p \cdot r \cdot t$, where I is the interest, p is the principal, r is the annual interest rate, and t is the time in years.

A \$22,000

B \$2,200

C \$220

D \$22

13 Simplify.

$$6\frac{2}{3} \div 1\frac{1}{5}$$

- A 8
- B $7\frac{13}{15}$
- C $7\frac{1}{2}$
- D $5\frac{5}{9}$

14 Solve the equation below for m .

$$4m^2 - 256 = 0$$

- A 8
- B 64
- C 8, -8
- D 16, -16

15 Choose the percent that is equivalent to the number.

0.75

- A 0.75%
- B 7.5%
- C 0.0075%
- D 75%

16 Simplify.

$$\frac{4n+8}{3n} + \frac{4}{9n}$$

- A $\frac{1}{9n}$
- B $3(n+2)$
- C $4(n+2)$
- D $\frac{1}{3n}$

Entry-Level Assessment

- 17 Simplify. Choose the answer in scientific notation.

$$(2.5 \times 10^8)(6 \times 10^3)$$

- A 15×10^{11}
- B 1.5×10^{12}
- C 15×10^{24}
- D 1.5×10^{25}

- 18 Factor $y^2 - y - 56$.

- A $(y - 14)(y + 4)$
- B $(y - 8)(y + 7)$
- C $(y - 2)(y + 28)$
- D $(y - 56)(y + 1)$

- 19 Find the mean, median, and mode of the data.

7, 7, 8, 9, 5, 2, 9, 10, 7, 6

- A 7, 7, none
- B 7, 7.5, none
- C $7.\bar{7}$, 7.5, 9
- D 7, 7, 7

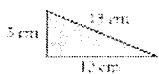
- 20 Solve $m - hp = d$ for p .

- A $p = \frac{m-d}{h}; h \neq 0$
- B $p = m - \frac{d}{h}; h \neq 0$
- C $p = d - \frac{h}{m}; m \neq 0$
- D $p = \frac{h-d}{m}; m \neq 0$

21 What is the image of point $C(-3, 4)$ after it is reflected over the x -axis?

- A $C'(-3, -4)$
- B $C'(3, -4)$
- C $C'(3, 4)$
- D $C'(-4, -3)$

22 Find the area of the triangle.



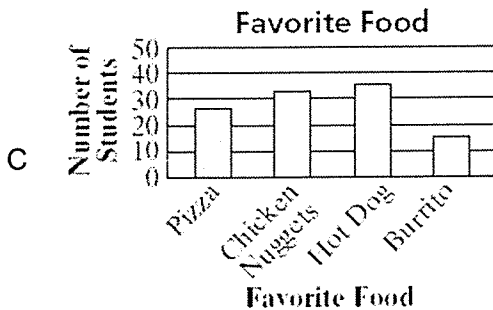
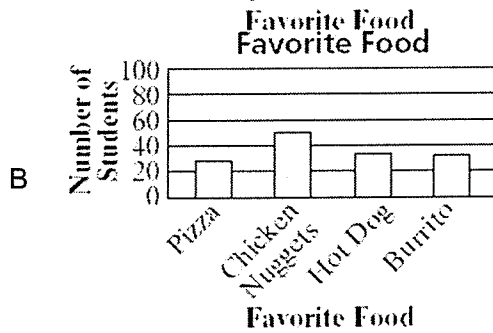
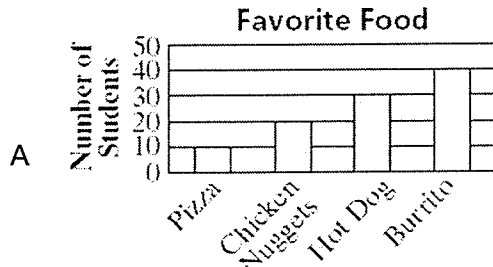
- A 30 cm^2
- B 60 cm^2
- C 17 cm^2
- D 18 cm^2

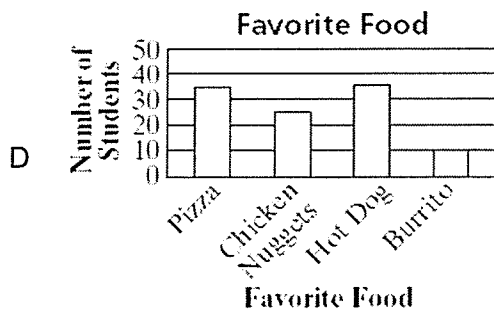
Entry-Level Assessment

- 23 In an elementary school poll, the favorite main course of the students who purchased lunch were recorded in the table below.

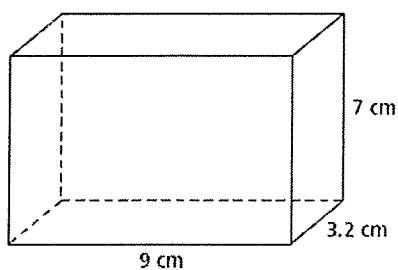
Food	Number of Students
Pizza	27
Chicken Nuggets	32
Hot Dog	35
Burrito	15

Which graph below best represents this data?





24 What is the surface area of the rectangular prism?



- A 201.6 square centimeters
- B 215.6 square centimeters
- C 228.4 square centimeters
- D 296.8 square centimeters

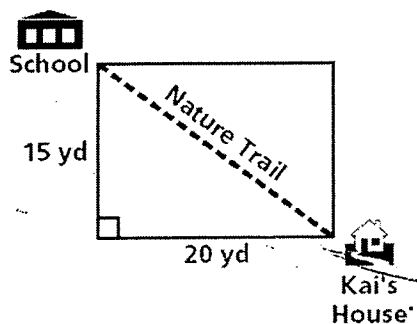
25 A spinner is divided into four equal sections numbered 1, 2, 3, and 4. What is the probability of spinning an odd number?

- A $\frac{1}{8}$
- B $\frac{1}{4}$
- C $\frac{1}{3}$
- D $\frac{1}{2}$

26 Adam rolls a number cube with faces numbered 1 to 6. What is the probability, to the nearest hundredth, that he rolls a 4?

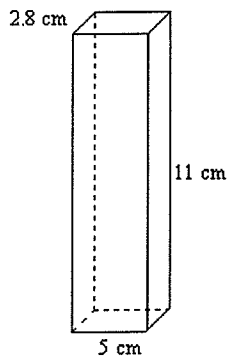
- A 0.06
- B 0.17
- C 0.20
- D 0.25

27 How far does Kai have to walk to school if he takes the nature trail?



- A 13.3 yd
- B 25.0 yd
- C 625.0 yd
- D 35.0 yd

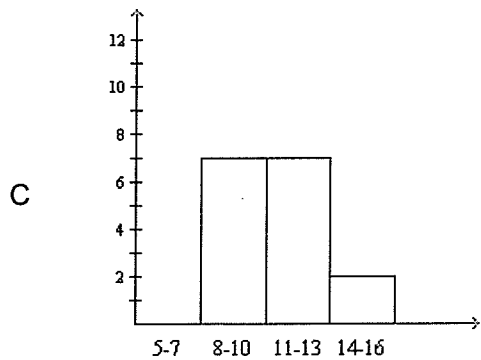
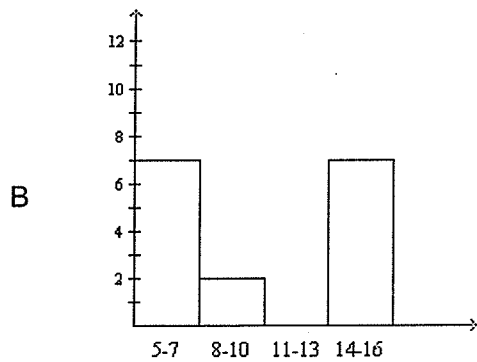
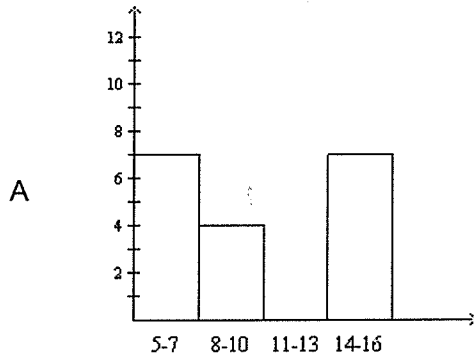
28 Find the volume of the rectangular prism.

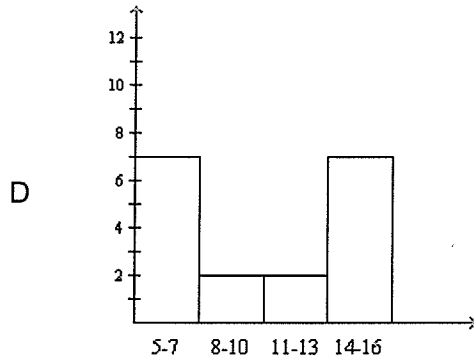


- A 308 cm^3
- B 199.6 cm^3
- C 55 cm^3
- D 154 cm^3

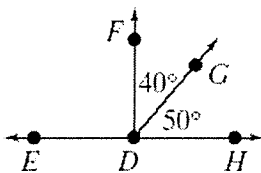
29 Which histogram uses the data in the table below?

Class Interval	Frequency
5-7	7
8-10	2
11-13	0
14-16	7



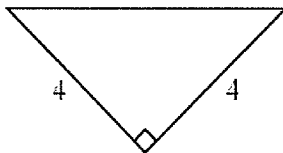


30 In this figure, identify two angles that are complementary.



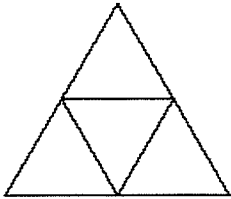
- A $\angle EDF, \angle FDH$
- B $\angle EDF, \angle FDG$
- C $\angle FDG, \angle GDH$
- D $\angle GDH, \angle FDH$

31 Which of the following best describes the triangle with the given measures?



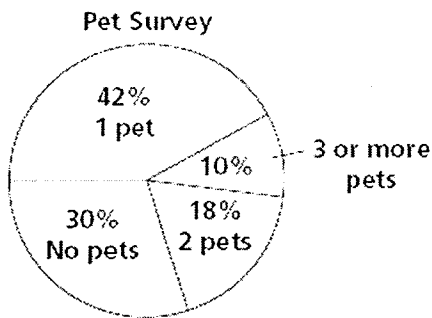
- A Acute equilateral triangle
- B Obtuse equilateral triangle
- C Right isosceles triangle
- D Right scalene triangle

32 Which figure could be made from the net shown?



- A Triangular prism
- B Square pyramid
- C Rectangular prism
- D Triangular pyramid

33 Margo asked 50 students at her school how many pets they owned. The circle graph below shows the results of Margo's survey.



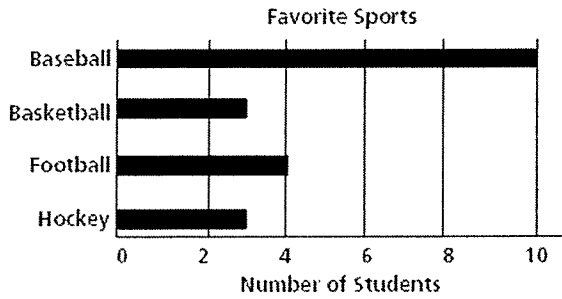
What percent of the students surveyed owned 3 or more pets?

- A 10%
- B 18%
- C 30%
- D 42%

34 Find the circumference of a circle with radius = 30 mm.

- A about 47.12 mm
- B about 282.74 mm
- C about 188.4 mm
- D about 109.67 mm

35 Molly surveyed her classmates about their favorite sport and made this bar graph.



Which table shows the same data as the bar graph?

Favorite Sport

Sport	Number of Students
Baseball	10
Basketball	3
Football	3
Hockey	4

A

Favorite Sport

Sport	Number of Students
Baseball	10
Basketball	4
Football	3
Hockey	3

B

Favorite Sport

Sport	Number of Students
Baseball	10
Basketball	3
Football	4
Hockey	3

C

Favorite Sport

Sport	Number of Students
Baseball	10
Basketball	2
Football	5
Hockey	3

D

Entry-Level Assessment

36 Find the mean, median, and mode: 2.3, 4.3, 3.2, 2.9, 2.7, 2.3

- A 2.95, 2.8, 2.3
- B 2.95, 2.3, 2.8
- C 2.8, 2.95, 2.3
- D 3.05, 2.8, 2.3

37 The diameter of the moon is about 3500 km.
Write the diameter of the moon in scientific notation.

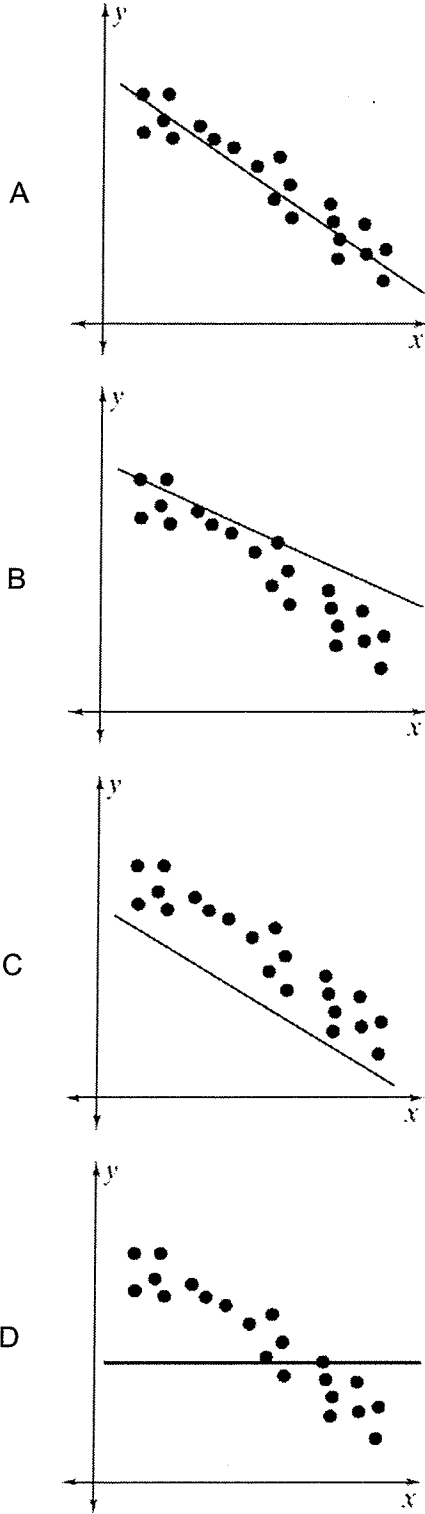
- A 3.5×10^2 km
- B 35×10^2 km
- C 3.5×10^3 km
- D 0.35×10^4 km

38 About 19.5 million vehicles crossed the Delaware Water Gap Bridge between New Jersey and Pennsylvania in 2002.

Write the number of vehicles in scientific notation.

- A 0.195×10^7
- B 1.95×10^7
- C 19.5×10^6
- D 1.95×10^8

39 Which answer choice has the most accurate trend line for the data points drawn in the graph?



Entry-Level Assessment

40 Choose the correct scatter plot of the data below. Is there a *positive correlation*, *negative correlation*, or *no correlation* between the sets of data?

x	6	1	5	2	7	6	5	4
y	2	0.2	3	1.5	4	3.2	2	2.1

