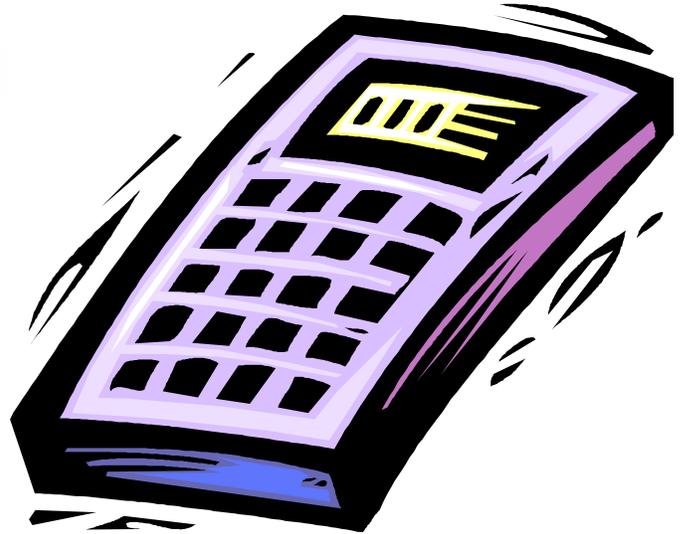# Grade 8 <u>Whole Numbers</u>

1.

Find my five numbers.
Each number is different from the others.
Each is a prime number.
Their sum is 58, and the product of the
largest and smallest numbers is 58.

2. Solve for x in the following equation.

$$1^3 + 2^3 + 3^3 + 4^3 + 5^3 + 6^3 = x^2$$

3.

If you subtract 9 from my mystery number,
then divide by 4 and add 10, you get 11.
What is my mystery number?

4. A box has 24 soccer balls inside.
Decreasing the number of balls by 3,
and doubling the remaining balls
would completely fill the box.
How many soccer balls will
completely fill the box?

Grade 8   <u>Measurement</u>

1.   One liter of paint is needed to cover all 6 sides of a cube.
How many liters will be needed to cover all 6 sides of a second
cube whose edge is twice as long an edge of the first cube?
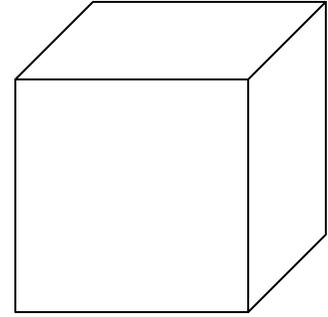
2.   One gallon of milk costs $1.92.
One quart of fruit punch costs $0.64.
One pint of orange drink costs $0.36.

An unmarked container contains 3 cups of either milk, fruit punch or orange drink.
If the container costs $0.54, what is in the container?

3.   Place the decimal point in the appropriate place in each number.
Then, find the sum of the four measurements (in millimeters).
HINT: you should end up with a sum between 165 L and 170 L.

a.   A bathtub full of water: 1 6 0 0 L

b.   A shoe box full of air: 4 8 0 0 L

c.   A gallon of milk: 3 8 0 0 L

d.   A glass full of juice: 2 4 0 0 L

SUM = _____

4.   What is 2 hour and 42 minutes after 1 hours and 48 minutes before 3:37 pm?

Grade 8   <u>Fractions</u>

1.

Three years ago I was one-third my father's age. In seven years I'll be one-half may father's age. How old am I?
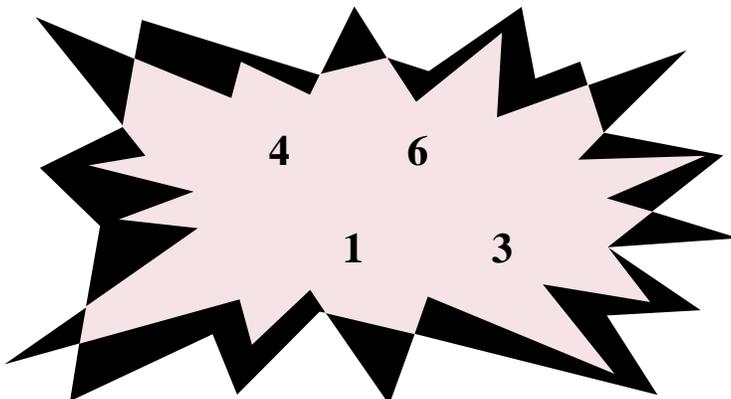
2. Add across. Subtract down.
What number belongs in the circle?

$8\frac{2}{3}$	$5\frac{1}{6}$	
$2\frac{1}{2}$	$2\frac{1}{4}$	
		◯

3. Put each of the following digits in a ◊ to get the answer given. What are the two fractions?

4   6

1   3

$$\frac{\diamondsuit}{\diamondsuit}+\frac{\diamondsuit}{\diamondsuit}=\frac{11}{12}$$

4. A shirt that is on sale for $12.44 is ⅔ of the regular price.
What is the regular price?

Grade 8   <u>Geometry</u>

1.   A man has a 10 m x 10 m square garden.
In the center is a 2 m x 2 m square patch which he cannot use.
He divides his usable space into four congruent rectangular patches.
What are the dimensions of one of these rectangular patches?

2.   Find the missing number (x).
Give your answer in feet.
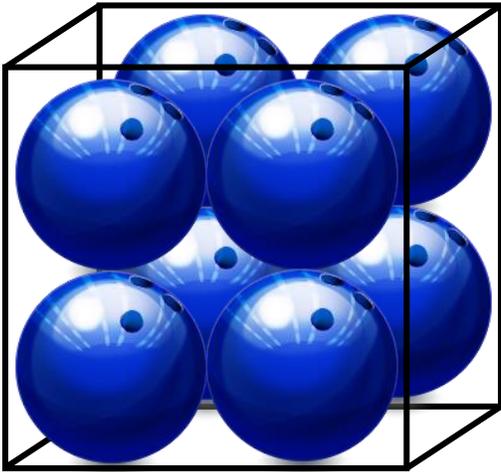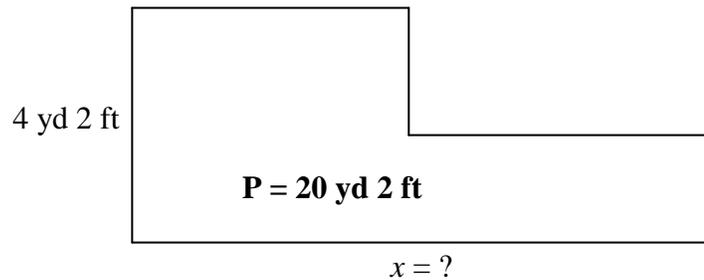
4 yd 2 ft

P = 20 yd 2 ft

$x = ?$

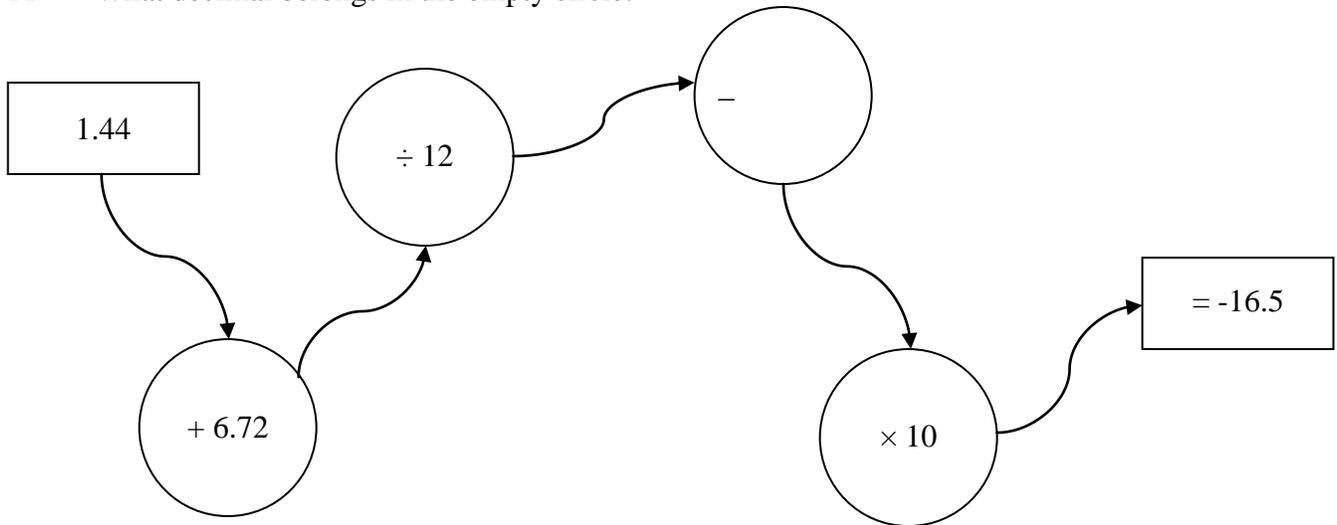**3.**   The box on the left just fits 8 balls each with a diameter of 12 in. The box can hold no more than 8 balls of this size. How much unfilled space is in this box? Keep your answer in terms of feet and π.

4 cm

4.   Find the volume of the cylinder.
Use 3.14 as an approximation of π.

12 cm
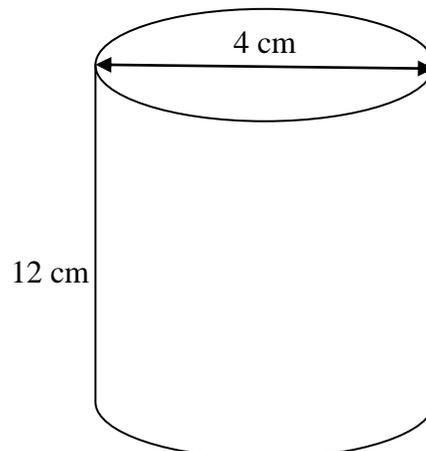
Grade 8 Decimals & Percents

1. What decimal belongs in the empty circle.

1.44

÷ 12

−

= -16.5

+ 6.72

× 10

2. A hat is on sale for $36.00.
The original price was $42.00.
Find the percent of decrease to the nearest tenth of a percent.

3. Jamie is going to flip 3 coins at once.
What is the probability (in percent) that at least 2 coins lands heads up?

4. The fraction $\dfrac{35}{111}$ is a non-terminating, repeating decimal. What is this decimal?

Grade 8   Brain Teasers

1.   If the number of plums in the divided by 2, 3, or 5, the remainder is 1.
What is the smallest possible number of plums in the bag?

2.   What 2-digit number has its digits reversed when 2 is added to its double.

3.   This big recipe book is 5 cm thick.
It has 2000 pages and its covers are each 0.5 cm thick.
How many centimeters through the book must the worm
eat to reach, and eat through page number 500?
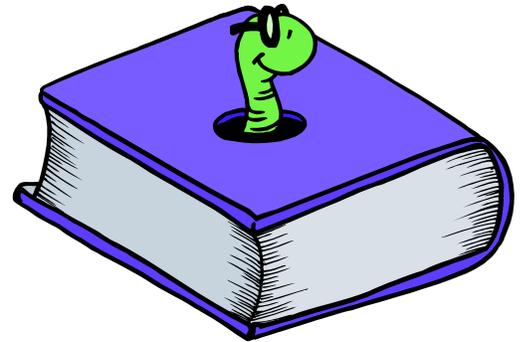
4.   I have $1.19 in coins, but I can't give change for a dollar.
What coins do I have?

Grade 8   <u>Whole Numbers</u> (ANSWERS)

1.

2, 3, 5, 19, & 29
or
2, 3, 7, 17, & 29

Find my five numbers.
Each number is different from the others.
Each is a prime number.
Their sum is 58, and the product of the largest and smallest numbers is 58.

2. Solve for x in the following equation.

$$1^3 + 2^3 + 3^3 + 4^3 + 5^3 + 6^3 = x^2$$

21

3.

If you subtract 9 from my mystery number, then divide by 4 and add 10, you get 11.
What is my mystery number?

13

4. A box has 24 soccer balls inside.
Decreasing the number of balls by 3, and doubling the remaining balls would completely fill the box.
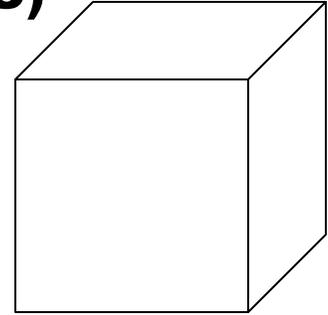How many soccer balls will completely fill the box?

42

Grade 8   <u>Measurement</u> (ANSWERS)

1. One liter of paint is needed to cover all 6 sides of a cube.
How many liters will be needed to cover all 6 sides of a second
cube whose edge is twice as long an edge of the first cube?

4 liters

2. One gallon of milk costs $1.92.
One quart of fruit punch costs $0.64.
One pint of orange drink costs $0.36.

An unmarked container contains 3 cups of either milk, fruit punch or orange drink.
If the container costs $0.54, what is in the container?

orange drink

3. Place the decimal point in the appropriate place in each number.
Then, find the sum of the four measurements (in millimeters).
HINT: you should end up with a sum between 165 L and 170 L.

a.   A bathtub full of water: 1 6 0 0 L

b.   A shoe box full of air: 4 8 0 0 L

c.   A gallon of milk: 3 8 0 0 L

d.   A glass full of juice: 2 4 0 0 L

168.84

SUM = _____

4. What is 2 hour and 42 minutes after 1 hours and 48 minutes before 3:37 pm?

4:31 pm

Grade 8   <u>Fractions</u> (ANSWERS)

1.

Three years ago I was one-third my father's age. In seven years I'll be one-half may father's age. How old am I?
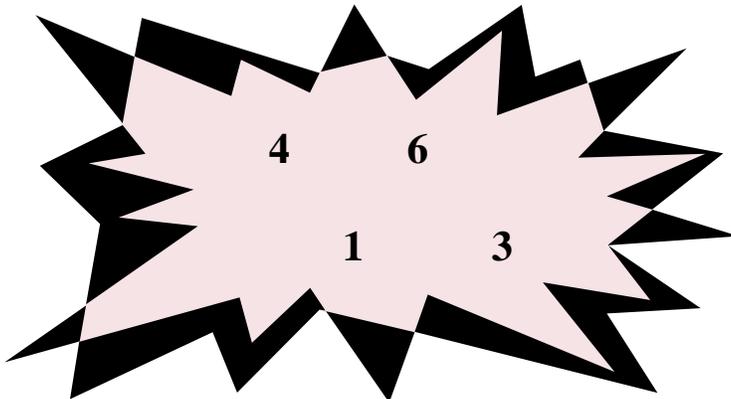
13 years old

2. Add across. Subtract down.
What number belongs in the circle?

$8\frac{2}{3}$	$5\frac{1}{6}$	
$2\frac{1}{2}$	$2\frac{1}{4}$	
		◯

$9\frac{1}{12}$

3. Put each of the following digits in a ◊ to get the answer given. What are the two fractions?

4   6

1   3

$$\frac{\diamondsuit}{\diamondsuit}+\frac{\diamondsuit}{\diamondsuit}=\frac{11}{12}$$

$\frac{1}{6}$ **&** $\frac{3}{4}$

4. A shirt that is on sale for $12.44 is ⅔ of the regular price. What is the regular price?
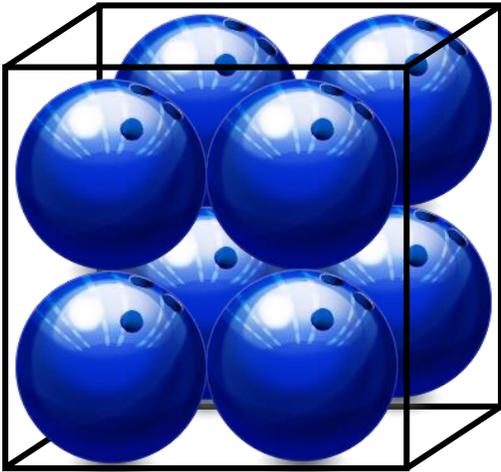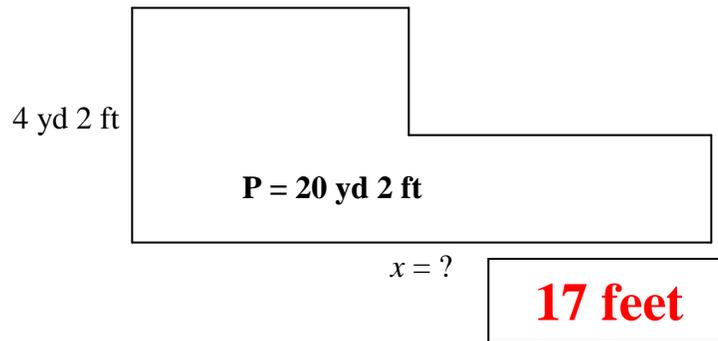
$18.66

Grade 8   <u>Geometry</u> (ANSWERS)

1.   A man has a 10 m x 10 m square garden.
In the center is a 2 m x 2 m square patch which he cannot use.
He divides his usable space into four congruent rectangular patches.
What are the dimensions of one of these rectangular patches?

> **4 m x 6 m**
> **or**
> **6 m x 4 m**

2.   Find the missing number (x).
Give your answer in feet.

4 yd 2 ft
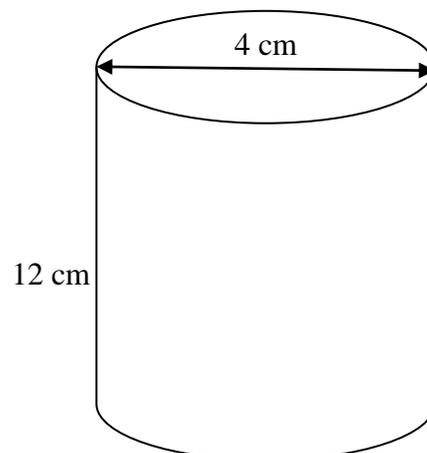
P = 20 yd 2 ft

x = ?

> **17 feet**

3.   The box on the left just fits 8 balls each with a diameter of 12 in. The box can hold no more than 8 balls of this size. How much unfilled space is in this box? Keep your answer in terms of feet and π.
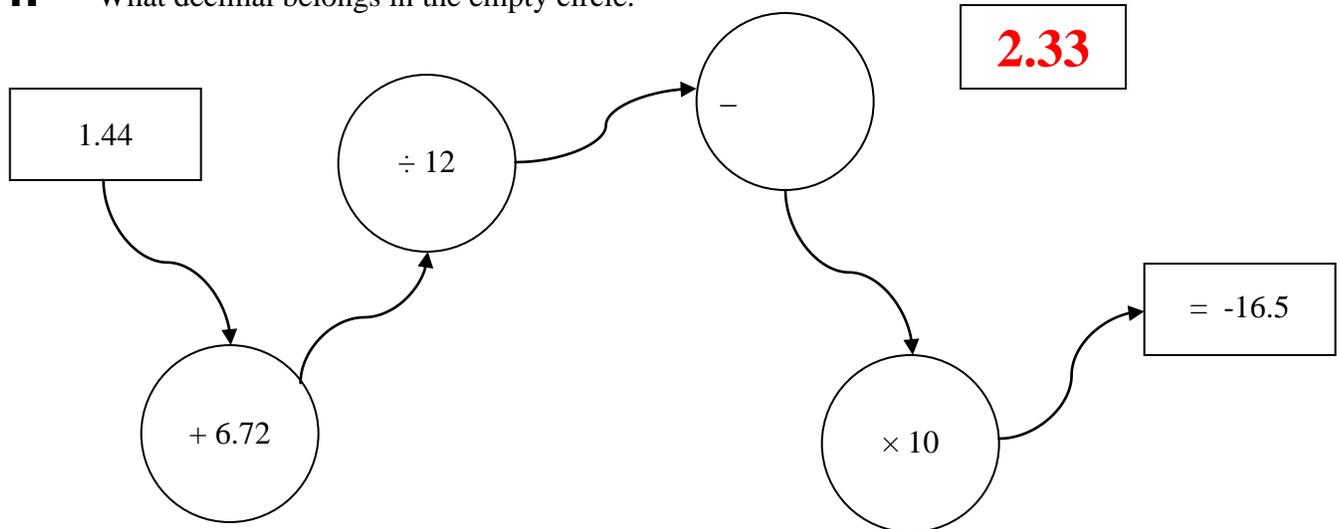
> $$8ft^3 - 1\tfrac{1}{3}\,\pi ft^3$$

4 cm

4.   Find the volume of the cylinder.
Use 3.14 as an approximation of π.

12 cm

> **150.72 cm^3**

Grade 8   <u>Decimals & Percents</u> (ANSWERS)

1.   What decimal belongs in the empty circle.

1.44

÷ 12

−

2.33

+ 6.72

× 10

= -16.5

2.   A hat is on sale for $36.00.
The original price was $42.00.
Find the percent of decrease to the nearest tenth of a percent.

14.3%

3.   Jamie is going to flip 3 coins at once.
What is the probability (in percent) that at least 2 coins lands heads up?
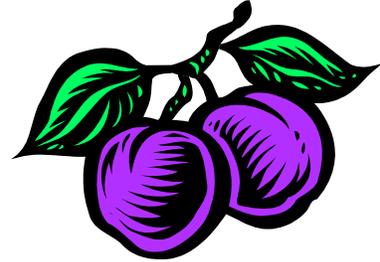
50%

4.   The fraction $\frac{35}{111}$ is a non-terminating, repeating decimal. What is this decimal?

$0.\overline{315}$

Grade 8   <u>Brain Teasers</u> (ANSWERS)

1.   If the number of plums in the divided by 2, 3, or 5, the remainder is 1.
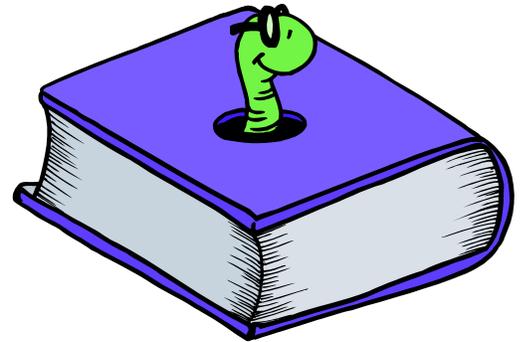What is the smallest possible number of plums in the bag?

> **31**

2.   What 2-digit number has its digits reversed when 2 is added to its double.

> **25**

3.   This big recipe book is 5 cm thick.
It has 2000 pages and its covers are each 0.5 cm thick.
How many centimeters through the book must the worm
eat to reach, and eat through page number 500?

> **255**

4.   I have $1.19 in coins, but I can't give change for a dollar.
What coins do I have?

> **3 quarters**
> **4 dimes**
> **4 pennies**