

# Mental Math

G-1

## Grade 11 Essential Mathematics (30S)

Unit G: Design Modelling

Specific Learning Outcome: 11.E4.D.1

General Questions	Answers
1. What is the lowest common multiple of 6 and 9?	18
2. How many metres are in 15.1 km?	15 100
3. Which letter comes next? J F M A M J J A S O N _____	D (for December)
4. Which two terms have the same value? 8, 4, 10, $\frac{12}{4}$ , $\frac{20}{5}$ , $\frac{8}{3}$	4, $\frac{20}{5}$
5. Your credit card has a balance of \$450. The minimum payment will be \$10 or 10% of your balance—whichever is more. How much is your minimum payment?	\$45
Unit Questions	
6. A cube has a side length of 3 cm. What is the surface area?	54 cm <sup>2</sup>
7. A rectangular solid has a length of 2 m, a depth of 3 m, and a height of 4 m. What are the areas of the front, side, and top faces?	8 m <sup>2</sup> , 12 m <sup>2</sup> , and 6 m <sup>2</sup>
8. A rectangular solid has a length of 2 m, a depth of 2 m, and a height of 4 m. What is the surface area?	40 m <sup>2</sup>
Other Questions	
9.	
10.	

# Mental Math

G-2

## Grade 11 Essential Mathematics (30S)

### Unit G: Design Modelling

### Specific Learning Outcome: 11.E4.D.1

#### General Questions

1. Evaluate:  $\frac{3}{5} + \frac{4}{10}$
2. Solve:  $4000 = \frac{k}{0.75}$
3. How many 125 g portions of corn are there in a 2 kg bag?
4. The perimeter of a square is 24 units. What is the area?
5. What is the complementary angle to  $30^\circ$ ?

#### Answers

1

$k = 3000$

16

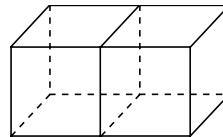
$36 \text{ units}^2$

$60^\circ$

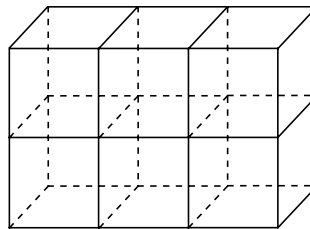
#### Unit Questions

For questions 6 to 8, all cubes have a side length of 2 in.

6. What is the surface area of one cube?
7. Two cubes are put side by side so that one side is touching as shown. What is the surface area?  
**Hint:** The sides that are touching are not counted in the surface area.



8. Six cubes are stacked in two rows as shown. What is the surface area?



$24 \text{ in.}^2$

$40 \text{ in.}^2$

$88 \text{ in.}^2$

#### Other Questions

9.

10.

# Mental Math

G-3

## Grade 11 Essential Mathematics (30S)

### Unit G: Design Modelling

### Specific Learning Outcome: 11.E4.D.1

#### General Questions

1. If seven oranges cost \$1.82, how much does each orange cost?
2. What is the average of the following numbers? 18, 19, 21, 22
3. Carmen spent 50% of her allowance for the month on a pair of shoes. Of her remaining money, she puts 50% in her bank account. If her allowance is \$300, how much money does she have left?
4. One movie theatre can accommodate 350 people. If there are three showings of Parry Halfoy at the same time and all three theatres are full, how many people are seeing the movie?
5. Daris completed an average of 50 math questions per day for seven days before his exam. How many questions did he complete in total over the seven days?

#### Answers

\$0.26

20

\$75

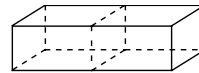
1050

350

#### Unit Questions

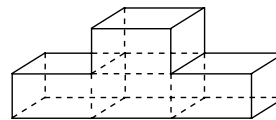
For questions 6 to 8, each rectangle has dimensions of  $1' \times 1' \times 2'$ .

6. What is the surface area of the double box?  
**Hint:** The sides that are touching are not counted in the surface area.



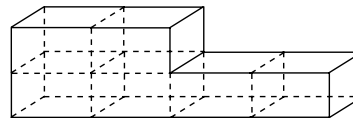
18 sq. ft.

7. What is the surface area of the shape shown?



32 sq. ft.

8. What is the surface area of the shape shown?



44 sq. ft.

#### Other Questions

9.

10.

# Mental Math

G-4

## Grade 11 Essential Mathematics (30S)

### Unit G: Design Modelling

### Specific Learning Outcome: 11.E4.D.2

#### General Questions

1. If you travel 1800 m in 5 min., how fast are you going (in m/s)?
2. Which side is the hypotenuse of a right triangle if the side lengths are 5, 12, 13?
3. What is the measure of the third angle of a triangle if the other two angles are  $80^\circ$  and  $60^\circ$ ?
4.  $8'5'' =$  \_\_\_\_\_ in.
5. What is the total cost of lunch if a sandwich costs \$2.25, a salad costs \$4.05, and an orange juice costs \$1.55?

#### Answers

6

13

40

101

\$7.85

#### Unit Questions

You are planning to paint a room blue with a grey ceiling. The dimensions of the room are 10' long  $\times$  20' wide  $\times$  7' high.

6. What is the surface area of the ceiling?
7. What is the surface area of the walls?
8. One can of paint covers 300 sq. ft. How many cans of grey and blue paint will you need to paint the room?

200 sq. ft.

420 sq. ft.

1 can grey /  
2 cans blue

#### Other Questions

9.

10.

# Mental Math

G-5

## Grade 11 Essential Mathematics (30S)

### Unit G: Design Modelling

### Specific Learning Outcome: 11.E4.D.2

#### General Questions

- Gazielle was born in 1998. How old will she be in 2040?
- What is a third of  $\frac{1}{9}$ ?
- How many eggs do you have if you have 11 dozen?
- Evaluate:  $75 - 50 - 25 + 25$
- Gabi paid \$72 for a pair of jeans. Chelsea paid \$34 less than Gabi. How much did Chelsea pay?

#### Answers

42

$\frac{1}{27}$

132

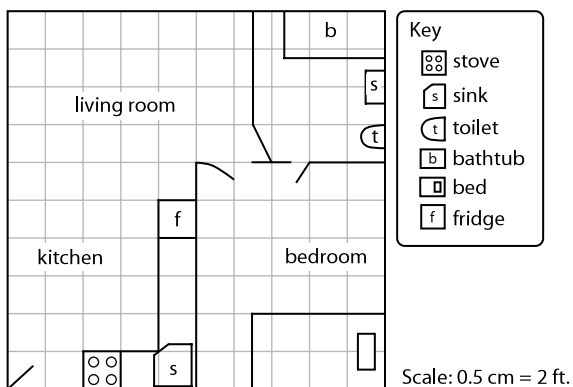
25

\$38

#### Unit Questions

Use the floor plan of an apartment shown below to answer questions 6 to 8. The scale is 0.5 cm = 2 ft.

- What is the actual area of this apartment? ( $A = l \times w$ )
- What are the actual dimensions of the bed?
- What are the actual dimensions of the stove?



400 sq. ft.

$7' \times 4'$

$2' \times 2'$

#### Other Questions

9.

10.

# Mental Math

G-6

## Grade 11 Essential Mathematics (30S)

### Unit G: Design Modelling

### Specific Learning Outcome: 11.E4.D.2

#### General Questions

1. Evaluate:  $\frac{7}{8} - \frac{3}{16}$
2. Estimate the product:  $41 \times 49$
3. There are 15 students missing from a class of 45. In lowest form, write the fraction representing the missing students in the class.
4. How many  $\text{mm}^3$  are there in  $1 \text{ cm}^3$ ?
5. The scale of the map is  $1 \text{ cm} : 22 \text{ km}$ . If it is  $7 \text{ cm}$  on the map from your house to the next town, how far do you have to drive?

#### Answers

$$\frac{11}{16}$$

$$\approx 2000$$

$$\frac{1}{3}$$

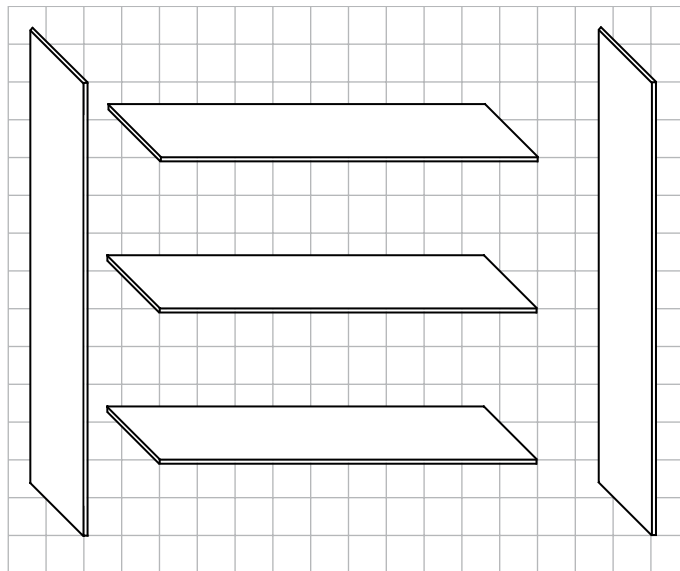
$$10^3 \text{ or } 1000$$

$$154 \text{ km}$$

#### Unit Questions

Use the exploded view of a shelving unit to answer questions 6 to 8.  
The scale is  $1 \text{ cm} : 3 \text{ ft}$ .

6. A wooden shelving unit has three shelves with diagram dimensions of  $1 \text{ cm} \times 5 \text{ cm}$ . What are the actual dimensions?
7. The two sidewalls of the shelving unit have diagram dimensions of  $1 \text{ cm} \times 6 \text{ cm}$ . What are the actual dimensions?
8. You decide to build a back wall for the shelving unit. What are the actual dimensions of this piece of wood?



$$3' \times 15'$$

$$3' \times 18'$$

$$15' \times 18'$$

#### Other Questions

9.

10.