

# Number 3

Name: \_\_\_\_\_

1. Tim buys 2 kg of almonds at \$5.49/kg and 4 kg of cashews at a store that includes GST in its prices. If the cost of his purchase is \$25.50, then the price of 1 kg of cashews is

- A. \$3.63
- B. \$7.26
- C. \$10.98
- D. \$14.52

$$2(5.49) + 4(x) = 25.50$$

$$10.98 + 4x = 25.50$$

$$4x = 14.52$$

$$x = \frac{14.52}{4} = 3.63$$

Use the following information to answer question

Ben was earning a monthly salary of \$5 000 before he changed jobs. At his new job he earns 10% less than he did at his old job.

- If after one year at his new job Ben receives a pay increase of 15%, how much will he then be earning per month?

- A. \$4 725
- B. \$4 750
- C. \$5 175
- D. \$5 250

*New Job*

$$5000 \times 0.90 = 4500$$

*Pay increase*

$$4500 \times 1.15 = 5175$$

Use the following information to answer question .

The following list shows Rick's yearly vehicle expenses.

- Insurance: \$1 200
- Gasoline: \$1 300
- Repairs: \$850

*expenses*

$$3350$$

- If Rick works 8 hours/day, 5 days/week, and takes home \$10/hour, then what is the **least** number of complete weeks he must work in order to pay for all his yearly vehicle expenses?

- A. 6 weeks
- B. 7 weeks
- C. 8 weeks
- D. 9 weeks

$$8 \cdot 5 \cdot 10 = 400$$

$$\frac{400x}{400} = \frac{3350}{400}$$

*Must work full week*

$$x = 8.375 = 9 \text{ weeks}$$

Which of the following rows has the rational numbers ordered from **least** to **greatest**?

Row	Least		Greatest	
<input checked="" type="radio"/> A.	$-\frac{5}{7}$ <i>-0.71</i>	$-\frac{2}{3}$ <i>-0.6</i>	$\frac{2}{5}$ <i>0.4</i>	$0.5$ $\frac{1}{2}$
<input type="radio"/> B.	$-\frac{5}{7}$	$-\frac{2}{3}$ <i>-0.6</i>	$\frac{2}{5}$	$0.5$ $\frac{1}{2}$
<input type="radio"/> C.	$-\frac{5}{7}$	$-\frac{2}{3}$	$0.5$ $\frac{1}{2}$	$\frac{2}{5}$
<input type="radio"/> D.	$-\frac{5}{7}$	$-\frac{2}{3}$	$0.5$ $\frac{1}{2}$	$\frac{2}{5}$

Monica multiplies  $-\frac{2}{3}$  by a number. If her answer is  $-\frac{3}{2}$ , then Monica multiplied  $-\frac{2}{3}$  by

A.  $-\left(\frac{3}{2}\right)^0 = -1$

B.  $\left(\frac{3}{2}\right)^0 = 1$

C.  $-\left(\frac{3}{2}\right)^2$

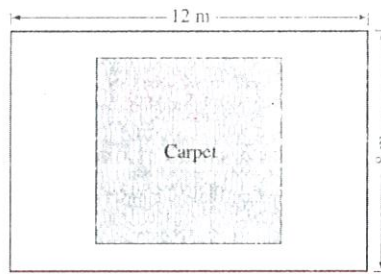
D.  $\left(\frac{3}{2}\right)^2$

*solve for x*  
 $-\frac{3}{2} \left[ -\frac{2}{3} \cdot x \right] = \left[ \frac{-3}{2} \right] \cdot \frac{3}{2}$

$x = -\frac{3}{2} \cdot -\frac{3}{2} = \frac{3}{2} \cdot \frac{3}{2} = \left(\frac{3}{2}\right)^2$

Use the following information to answer question

A square carpet covers 37.5% of the floor area of a rectangular room, as shown below.



$12 \times 8 = 96$

$96 \times 0.375 = 36$

$\sqrt{36} = 6$

What is the side length of the carpet shown above?

A. 7 m

B. 6 m

C. 5 m

D. 4 m

Use the following information to answer question

X:  $-0.054$

Y:  $-\frac{11}{3}$

Z:  $-\frac{15}{4}$

*largest*

$-3.666\bar{6}$

$-3.75$  *smallest*

Which of the following inequalities represents the rational numbers shown above?

A.  $Y < Z < X$

B.  $Y < X < Z$

C.  $Z < X < Y$

D.  $Z < Y < X$



# Number 3

Name: \_\_\_\_\_

Use the following information to answer question

Emily's cellphone plan charges her \$0.05 per text message, \$0.06 per minute of voice usage and a \$5.00 base fee each month.

What is Emily's cellphone bill if she sent 33 text messages and talked for 47 minutes in one month?

- A. \$5.11
- B. \$6.65
- C. \$7.82
- D. \$9.47**

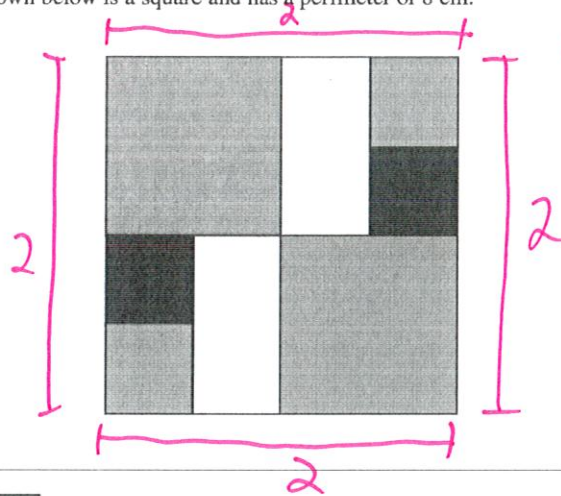
$$0.05t + 0.06v + 5 = A$$

$$0.05(33) + 0.06(47) + 5 = A$$

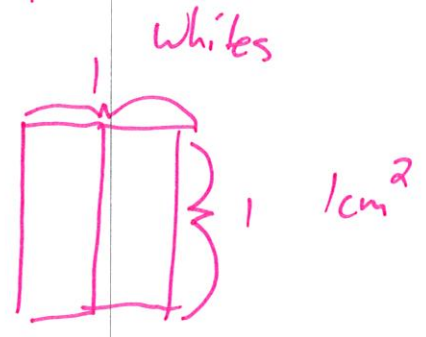
$$9.47 = A$$

Use the following information to answer numerical-response question

The diagram shown below is a square and has a perimeter of 8 cm.



$$x = \frac{8}{4} = 2$$

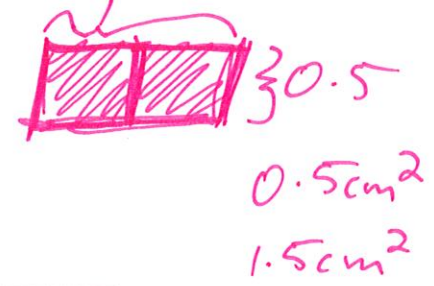


**Numerical Response**

What is the **total** area of the white rectangles and the black squares?

Answer: 1.5 cm<sup>2</sup>

(Record your answer in the numerical-response section on the answer sheet.)



Use the following information to answer numerical-response question

A scientific calculator has 40 buttons, of which  $\frac{1}{4}$  are white,  $\frac{1}{5}$  are grey, and 4 are orange. The rest of the buttons are black.

**Numerical Response**

How many black buttons does the calculator have?

Answer: 18

(Record your answer in the numerical-response section on the answer sheet.)

$$40 \cdot \frac{1}{4} = 10 \text{ white}$$

$$40 \cdot \frac{1}{5} = 8 \text{ Grey}$$

$$4 \text{ orange}$$


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$$22$$

$$\text{Black } \left\{ \begin{array}{l} 40 \\ - 22 \\ \hline 18 \end{array} \right.$$

$$\frac{1}{4} \Big| \frac{3}{x} \quad \frac{11}{10} \quad \frac{9}{8} \quad \frac{7}{7}$$

$$0.5 \Big| \frac{1}{2} \quad \frac{2}{2} \quad \frac{3}{6}$$

**Numerical Response**

How many whole numbers could represent the value of  $x$  in the inequality statement  $\frac{1}{4} < \frac{3}{x} < 0.5$ ?

11, 10, 9, 8, 7

Answer: 5 whole numbers

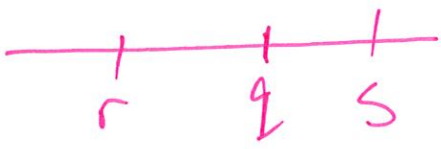
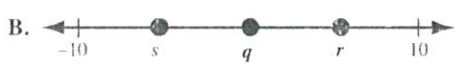
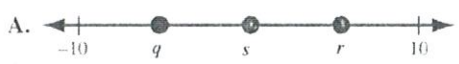
(Record your answer in the numerical-response section on the answer sheet.)

Use the following information to answer question

Variables  $q$ ,  $r$ , and  $s$  represent rational numbers.

*q longer than r*  
 $q > r$   
 $s = q + 1$   
*Bigger than q*

Which of the following number lines represents the order of the three rational numbers?



Use the following information to answer question

On a bike trip, Patrick rides at a constant speed of 14.4 km/h for  $\frac{3}{4}$  of an hour and then at a constant speed of 13.2 km/h for  $\frac{1}{3}$  of an hour.

How many kilometres in total did Patrick travel on the bike trip?

- A.** 15.2 km
- B. 15.0 km
- C. 14.7 km
- D. 14.3 km

$$14.4 \cdot \frac{3}{4} + 13.2 \cdot \frac{1}{3} =$$

$$10.8 + 4.4 = 15.2$$

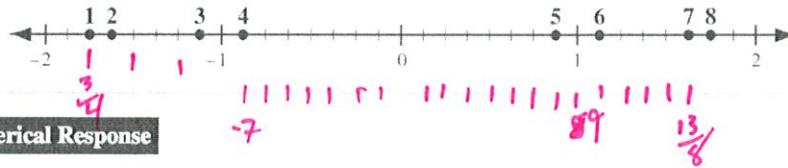


# Number 3

Name: \_\_\_\_\_

Use the following information to answer numerical-response question

The eight labelled points on the number line shown below represent rational numbers.



### Numerical Response

Match each of the following rational numbers to its corresponding point on the number line shown above.

$-1\frac{3}{4}$  is located at Point 1. (Record in the **first** column)

$\frac{13}{8}$  is located at Point 7. (Record in the **second** column)

$1\frac{1}{8} = \frac{9}{8}$   
1.125 is located at Point 6. (Record in the **third** column)

$-0.875$  is located at Point 4. (Record in the **fourth** column)

(Record your answer in the numerical-response section on the answer sheet.)

Use the following information to answer numerical-response question

A store owner pays a sales clerk \$12/h for each hour worked. The assistant manager of the store earns one-and-a-half times the clerk's hourly wage and the manager of the store earns two-and-a-half times the clerk's hourly wage.

### Numerical Response

In total, how much money is paid to the three employees in one day if the sales clerk, the assistant manager, and the manager each work 7.25 h?

Answer: \$ 435

(Record your answer in the numerical-response section on the answer sheet.)

$$\begin{aligned}
 \text{Sales} &= 12/h \\
 \text{A M} &= 12 \times 1.5 = 18/h \\
 \text{M} &= 12 \times 2.5 = 30/h
 \end{aligned}$$

total paid per  
hour

$$12 + 18 + 30 = 60$$

$$60 \times 7.25 =$$

A store owner pays a sales clerk \$12/h for each hour worked. The assistant manager of the store earns one-and-a-half times the clerk's hourly wage and the manager of the store earns two-and-a-half times the clerk's hourly wage.

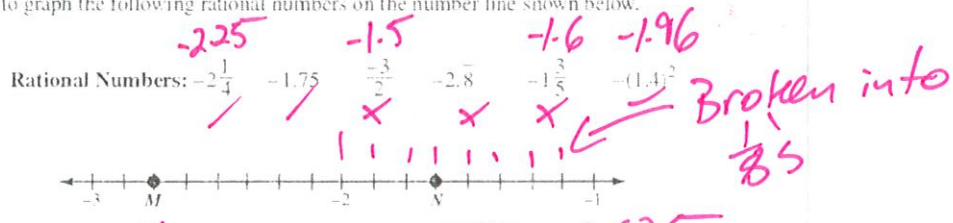
**Numerical Response**

8. In total, how much money is paid to the three employees in one day if the sales clerk, the assistant manager, and the manager each work 7.25 h?

Answer: \$ 435 *previous page*

(Record your answer in the numerical-response section on the answer sheet.)

Sam plans to graph the following rational numbers on the number line shown below.



**Numerical Response**

6. How many of the rational numbers shown above should be graphed between Point M and Point N on the number line?

Answer: 3

(Record your answer in the numerical-response section on the answer sheet.)