CM1 Mathématiques : numération Mnum L8 p *1 / 3*

L 8 Repérer, placer et encadrer des fractions simples sur une demi-droite graduée

CORRECTION 2ème

**☹ Exercice 5 :**

Antoine veut se rendre à vélo chez sa grand-mère qui habite à 36 km. Il parcourt la moitié du trajet avant midi. Il reprend la route et parcourt encore $\frac{1}{4}$ du trajet avant de s’arrêter pour gouter à 16 h 30.

1 / Reproduis cette demi-droite graduée. 

2 / Repasse en rouge la distance qui correspond au trajet du matin et en bleu la fraction qui correspond au trajet entre midi et le gouter.

3 / Quelle fraction du trajet a-t-il déjà parcourue à 16 h 30 ? Marque-la sur la demi-droite.

4 / Quelle fraction représente le trajet qu'il lui reste à faire ?

5 / Quelle distance a-t-il parcourue le matin et quelle distance lui reste-t-il à parcourir après le gouter?

 Correction

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| Antoine |  |  |  |  |  |  |  |  |  |  | Grand-mère |
| 0 |  | $$\frac{1}{4}$$ |  | $$\frac{2}{4}$$ |  | $$\frac{3}{4}$$ |  | $\frac{4}{4}$ =1 |
| 0 |  |  |  | $$\frac{1}{2}$$ |  |  |  | $\frac{2}{2}$ =1 |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0 km |  | 9 |  | 18 |  | 27 |  | 36 km |
| 5 / | 🡨 18 km🡪 |  |  |  | 🡨 9 km🡪 |  |
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2 / Il parcourt la moitié du trajet avant midi, c’est à dire $\frac{1}{2}$ (Repasse en rouge la distance qui correspond au trajet du matin)

3 / Il reprend la route et parcourt encore $\frac{1}{4}$ du trajet avant de s’arrêter pour gouter à 16 h 30 (en bleu la fraction qui correspond au trajet entre midi et le gouter).

4 / Quelle fraction représente le trajet qu'il lui reste à faire ?

5 / Quelle distance a-t-il parcourue le matin ? 🡪 Il a parcouru 18 km le matin.

Quelle distance lui reste-t-il à parcourir après le gouter? Il lui reste à parcourir 9km.

*Encadrer des fractions*

**☺ Exercice 6 : Encadre** les fractions suivantes entre deux nombres entiers



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| Correction : Pour répondre à cet exercice, il est intéressant de schématiser les fractions avec une bande numérique comme ci-contre.1 < $\frac{4}{3}$ < 2 , 0 < $\frac{1}{3}$ < 1 |

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| --- | --- | --- | --- | --- |
| 0 |  | 1 |  | 2 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | $$\frac{1}{3}$$ | $$\frac{3}{3}$$ |  | $$\frac{6}{3}$$ |
|  |  |  |  | $$\frac{4}{3}$$ |  |

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| 1 < $\frac{7}{2}$ < 2 |

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| 0 |  |  | 1 |  |  | 2 |  |  | 3 |  |  | 4 |
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|  | $$\frac{1}{2}$$ | $$\frac{2}{2}$$ | $$\frac{3}{2}$$ | $$\frac{4}{2}$$ | $$\frac{5}{2}$$ | $$\frac{6}{2}$$ | $$\frac{7}{2}$$ | $$\frac{8}{2}$$ |

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**😐 Exercice 7 :** a. **Reproduis** la demi-droite graduée et place les lettres.



b. A quelle fraction correspondent les lettres B, D et F ?

c. Quelles fractions sont comprises entre 0 et 1 ? entre 1 et 2? entre 2 et 3

Correction

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| 0 |  |  |  |  |  |  |  |  | 1 |  |  |  |  |  |  |  |  | 2 |  |  |  |  |  |  |  |  | 3 |  |  |
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|  |  | $$\frac{1}{5}$$ |  |  | $$\frac{3}{5}$$ |  |  | $$\frac{5}{5}$$ |  |  |  |  | $$\frac{8}{5}$$ |  |  | $$\frac{10}{5}$$ |  |  |  |  |  |  | $$\frac{14}{5}$$ | $$\frac{15}{5}$$ |  |  |
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|  |  | A |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **0** |  |  |  |  |  |  |  |  | **1** |  |  |  |  |  |  |  |  | **2** |  |  |  |  |  |  |  |  | **3** |  |  |
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| **0** |  |  |  |  |  |  |  |  | **1** |  |  |  |  |  |  |  |  | **2** |  |  |  |  |  |  |  |  | **3** |  |  |
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Quelles fractions sont comprises entre 0 et 1 ?

Il suffit de regarder le dessin et on voit que A : $\frac{1}{5}$ / et E : $\frac{3}{5}$ sont plus comprises entre 0 et 1.

entre 1 et 2? 🡪 B : 1+ $\frac{1}{5}$ / et F :1+ $\frac{2}{5}$ sont plus comprises entre 1 et 2.

entre 2 et 3? 🡪 C : $\frac{14}{5}$ / et D :2+ $\frac{3}{5}$ sont plus comprises entre 2 et 3.

**☹ Exercice 8 :** **Recopie** les fractions



a. **Entoure** en rouge les fractions supérieures à 1.

b. **Entoure** en vert les fractions inférieures à 1.

c. Quelle fraction n'as-tu pas entourée? Pourquoi?

Correction : On représente rapidement chaque bande, en tenant compte de la valeur du dénominateur, comme dans l’exercice cherchons (voir correction 1er partie). Ici on des fractions en tiers, en quart et en cinquième.

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| 0 |  |  |  |  |  |  |  |  |  |  | 1 |  |  |  |  |  |  |  |  |  |  | 2 |
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|  |  |  | $$\frac{1}{4}$$ |  | $$\frac{2}{4}$$ |  | $$\frac{3}{4}$$ |  | $$\frac{4}{4}$$ |  | $$\frac{5}{4}$$ |  | $$\frac{6}{4}$$ |  | $$\frac{7}{4}$$ |  | $$\frac{8}{4}$$ |

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| 0 |  |  |  |  |  |  |  |  | 1 |  |  |  |  |  |  |  |  | 2 |  |  |  |  |  |  |  |  | 3 |  |  |
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|  |  | $$\frac{1}{5}$$ |  |  |  |  |  | $$\frac{5}{5}$$ |  |  |  |  |  |  |  | $$\frac{10}{5}$$ |  |  |  |  |  |  |  | $$\frac{15}{5}$$ |  |  |

La fraction $\frac{4}{4}$ n’a pas été entourée, car elle est égale à 1 :$ \frac{4}{4}$ = 1

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| On peut conclure à travers cet exercice la remarque importante : ☞ une fraction est <1 quand la valeur du numérateur est < au dénominateurExemple : $\frac{2}{3}$ <1 car 2 < 3  ☞ une fraction est >1 quand la valeur du numérateur est > au dénominateurExemple : $\frac{7}{4}$ >1 car 7 < 4 |

**☹ Exercice 9 :** **Recopie** et **encadre** les fractions avec les nombres. 0 1 2 3 4 5 6 7 8 9



Correction

Pour faire cet exercice on peut regarder les bandes des exercices précédents.

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| 0 < $\frac{3}{4}$ < 1  | 0 < $\frac{1}{3}$ < 1  | 1 < $\frac{3}{2}$ < 2  | 0 < $\frac{1}{2}$ < 1  | 4 < $\frac{9}{2}$ < 5  | 1 < $\frac{7}{4}$ < 2  |

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| *Défi math*L’ogre a déjà avalé $\frac{17}{4}$ de tartelettes et voici ce qui lui resteCombien de tartelettes entières a t-il déjà avalées ?Combien en avait-il au début ? |

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| 0 |  |  | 1 |  |  | 2 |  |  | 3 |  |  | 4 |  |  | 5 |  |  | 6 |
|  | 1 tartelette | 1 tartelette | 1 tartelette | 1 tartelette |  |  |  |  |  |  |  |  |  |
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|  | $$\frac{1}{4}$$ |  | $$\frac{4}{4}$$ |  |  | $$\frac{8}{4}$$ |  |  | $$\frac{12}{4}$$ |  |  | $$\frac{16}{4}$$ |  |  | $$\frac{20}{4}$$ |  |  | $$\frac{24}{4}$$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $$\frac{17}{4}$$ |  |  |  |  |  |  |  |

Il a donc avalé 4 tartelettes et $\frac{1}{4}$ d’une. Au début il avait 5 tartelettes

Remarque

Par calcul on peut montrer ceci. On va écrire 17 sous forme d’une addition de 4 + ?

$\frac{17}{4}$ = $\frac{4 + 4 + 4 +4 +1}{4}$ = $\frac{4}{4}$ + $\frac{4}{4}$ + $\frac{4}{4}$ + $\frac{4}{4}$ + $\frac{1}{4}$ on sait que $\frac{4}{4}$ = 1 donc on a 1 + 1 + 1 + 1 + $\frac{1}{4}$ = 4 + $\frac{1}{4}$

Papier quadrillé pour représenter les fractions

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