Høgskolen i Molde
Vitenskapelig høgskole i logistikk

1. Grunnleggende emner

Oppgaver torsdag 6. august

"*MAT001 Forkurs i matematikk*", 2020

Problem 1.1 — Brøkregning

a) Regn ut uttrykkene og skriv brøken på enklest mulig form.

i) $1-\frac{2}{5}+\frac{4}{9}$ (1.1)

ii) $-\frac{1}{4}+\frac{3}{5}-\frac{1}{2}+\frac{7}{10}$ (1.2)

iii) $\frac{2}{5}\cdot\frac{3}{4}\cdot\frac{5}{8}\cdot\frac{16}{3}$

iv) $\left(\frac{1}{4}:\frac{7}{6}\right)\cdot\left(-\frac{14}{3}\right)$ (1.3)

v) $\frac{1}{3}\cdot\left(\frac{4}{5}:2\right)\cdot\frac{7}{8}$ (1.4)

vi) $-\frac{-1}{2}+\frac{-3}{-2}$ (1.5)

vii) $\frac{1}{3}+\frac{2}{5}+\frac{1}{4}+\frac{11}{15}-\frac{13}{6}$ (1.6)

viii) $\frac{5}{6}-\left(-\frac{1}{-2}-\frac{-5}{2}\right)$ (1.7)

ix) $\frac{2}{5}\cdot\frac{3}{4}\cdot\frac{5}{8}\cdot\frac{16}{3}$

x) $-\frac{8}{9}-\frac{4}{5}+\frac{7}{3}-\frac{2}{15}$ (1.8)

xi) $\left[\frac{1}{2}-\left(\frac{9}{4}-\frac{1}{6}\right)\right]\cdot\frac{1}{19}$ (1.9)

xii) $-\frac{-7}{-8}-\frac{-3}{4}$ (1.10)

xiii) $\left(\frac{12}{7}:\frac{18}{35}\right)\cdot\left(-\frac{9}{5}\right)$ (1.11)

b) Regn ut uttrykkene og skriv brøken på enklest mulig form.

i) $$\frac{1-\frac{1}{3}}{1+\frac{1}{3}} \tag{1.12}$$

ii) $$\frac{1}{1-\frac{1}{1-\frac{1}{1-\frac{1}{4}}}} \tag{1.13}$$

iii) $$\frac{1-\frac{1-\frac{1}{6}}{\frac{4}{2}}}{2} \tag{1.14}$$

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Problem 1.2 — Kvadratsetningene

a) Løs opp parenteser og slå sammen like ledd:

$$i)\quad (5m+2n)(5m-2n) \tag{1.15}$$

$$ii)\quad -(6u-3v)(6u+3v) \tag{1.16}$$

$$iii)\quad (-x-4)^2 \tag{1.17}$$

$$iv)\quad (-s+10t)(-s-10t) \tag{1.18}$$

$$v)\quad (abcd-acde)(acde+abcd) \tag{1.19}$$

$$vi)\quad \left(\frac{1-a}{\sqrt{1+a}}-\sqrt{\frac{a}{1-a}}\right)\left(\frac{1-a}{\sqrt{1+a}}+\sqrt{\frac{a}{1-a}}\right) \tag{1.20}$$

$$\tag{1.21}$$

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