1. Extemporale aus der Mathematik am 14.10.2014
Klasse 8a Gruppe A Name: ………………………………………….

1. Kläre ab, welche Tabelle Werte zu einer direkten Proportionalität enthalten:

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| 0 | 3 | 5 | 6 | 7 | 12 |
|  | 4,5 |  | 9 | 10,5 | 20 |

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| -2,68 | -1,34 | 2,68 |  | 16,08 | 21,44 |
|  | -1,25 | 1,25 | 2,5 | 7,5 | 10 |

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| 0 | 0,5 | 1,0 | 1,5 |  | 2,5 |
| 0,5 | 1,0 | 1,5 |  | 2,5 |  |

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| -5 | -3 | 2 | 7 | 10 | 19 |
|  | -4,5 |  | 10,5 | 15 |  |

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2. Bestimme jeweils die Proportionalitätskonstante k in der angegebenen Einheit

 a: Jeden Abend sammelt die Oma die Schnecken im Garten. Am Mittwoch abend sammelt sie 120 Schnecken in 1,5 h.
 ges: k in $[\frac{Schnecken}{h}]$ k = ……………………………………………………………………………………..

 b: 1 Maler arbeitet einen Raum mit 63 m2 in 4,5 Stunden ab.
 ges: k in $[\frac{m^{2}}{h}]$ bezogen auf 1 Maler k = ……………………………………………………………………………………..

 c: 8 Hühner legen 56 Eier in 4 Stunden.
 ges: k in $[\frac{Eier}{h}]$ bezogen auf 1 Huhn k = ……………………………………………………………………………………..

3.


 Ergänze die fehlenden Werte, fertige ein passendes Diagramm an und beantworte folgende Fragen rechnerisch und bestätige grafisch:

 Welcher y-Wert gehört zu x = 5?

 Welcher x – Wert gehört zu y = 50?

1. Extemporale aus der Mathematik am 14.10.2014
Klasse 8a Gruppe B Name: ………………………………………….

1. Kläre ab, welche Tabelle Werte zu einer direkten Proportionalität enthalten:

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| 0 | 3 | 5 | 6 | 7 | 12 |
|  |  | 7,5 | 9 |  | 20 |

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| -2,68 | -1,34 | 2,68 |  | 4,02 | 20,10 |
|  | -1,40 | 1,40 | 0,70 | 2,1 | 10,5 |

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|  | -4,5 |  | 9 | 22,5 |  |

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| 0 | -0,5 | -1,0 | -1,5 |  | -2,5 |
| 0,5 | 1,0 | 1,5 |  | 2,5 |  |

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2. Bestimme jeweils die Proportionalitätskonstante k in der angegebenen Einheit

 a: Jeden Abend sammelt die Oma die Schnecken im Garten. Am Mittwoch abend sammelt sie 40 Schnecken in 0,5 h.
 ges: k in $[\frac{Schnecken}{h}]$ k = ……………………………………………………………………………………..

 b: 1 Maler arbeitet einen Raum mit 60 m2 in 2,4 Stunden ab.
 ges: k in $[\frac{m^{2}}{h}]$ bezogen auf 1 Maler k = ……………………………………………………………………………………..

 c: 5 Hühner legen 70 Eier in 4 Stunden.
 ges: k in $[\frac{Eier}{h}]$ bezogen auf 1 Huhn k = ……………………………………………………………………………………..

3.


 Ergänze die fehlenden Werte, fertige ein passendes Diagramm an und beantworte folgende Fragen rechnerisch und bestätige grafisch:

 Welcher y-Wert gehört zu x = 10?

 Welcher x – Wert gehört zu y = 30?

1. Extemporale aus der Mathematik am 14.10.2014
Klasse 8a Gruppe A Name: Lösung

1. Kläre ab, welche Tabelle Werte zu einer direkten Proportionalität enthalten:

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| 0 | 3 | 5 | 6 | 7 | 12 |
|  | 4,5 |  | 9 | 10,5 | 20 |

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| --- | --- | --- | --- | --- | --- |
| -2,68 | -1,34 | 2,68 |  | 16,08 | 21,44 |
|  | -1,25 | 1,25 | 2,5 | 7,5 | 10 |

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| --- | --- | --- | --- | --- | --- |
| 0 | 0,5 | 1,0 | 1,5 |  | 2,5 |
| 0,5 | 1,0 | 1,5 |  | 2,5 |  |

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| -5 | -3 | 2 | 7 | 10 | 19 |
|  | -4,5 |  | 10,5 | 15 |  |

 |

2. Bestimme jeweils die Proportionalitätskonstante k in der angegebenen Einheit

 a: Jeden Abend sammelt die Oma die Schnecken im Garten. Am Mittwoch abend sammelt sie 120 Schnecken in 1,5 h.
 ges: k in $[\frac{Schnecken}{h}]$ k =$\frac{120 Schnecken }{1,5 h}=80\frac{Schnecken}{h}$

 b: 1 Maler arbeitet einen Raum mit 63 m2 in 4,5 Stunden ab.
 ges: k in $[\frac{m^{2}}{h}]$ bezogen auf 1 Maler k =$\frac{63 m^{2}}{4,5 h}=14\frac{m^{2}}{h}$

 c: 8 Hühner legen 56 Eier in 4 Stunden.
 ges: k in $[\frac{Eier}{h}]$ bezogen auf 1 Huhn k = $\frac{7 Eier }{4 h}=1,75\frac{Eier}{h}$

3.

 

 Ergänze die fehlenden Werte, fertige ein passendes Diagramm an und beantworte folgende Fragen rechnerisch und bestätige grafisch:

 Welcher y-Wert gehört zu x = 5? y = 6,25 \* 5 = 31,25 grafisch: y = 30

 Welcher x – Wert gehört zu y = 50? x = $\frac{y}{k}=\frac{50}{6,25}=8$ grafisch: x = 7,8

1. Extemporale aus der Mathematik am 14.10.2014
Klasse 8a Gruppe B Name: Lösung

1. Kläre ab, welche Tabelle Werte zu einer direkten Proportionalität enthalten:

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| 0 | 3 | 5 | 6 | 7 | 12 |
|  |  | 7,5 | 9 |  | 20 |

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| --- | --- | --- | --- | --- | --- |
| -2,68 | -1,34 | 2,68 |  | 4,02 | 20,10 |
|  | -1,40 | 1,40 | 0,70 | 2,1 | 10,5 |

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| --- | --- | --- | --- | --- | --- |
| -4 | -2 | 2 | 4 | 10 | 19 |
|  | -4,5 |  | 9 | 22,5 |  |

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|  | x |

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| --- | --- | --- | --- | --- | --- |
| 0 | -0,5 | -1,0 | -1,5 |  | -2,5 |
| 0,5 | 1,0 | 1,5 |  | 2,5 |  |

 |

2. Bestimme jeweils die Proportionalitätskonstante k in der angegebenen Einheit

 a: Jeden Abend sammelt die Oma die Schnecken im Garten. Am Mittwoch abend sammelt sie 40 Schnecken in 0,5 h.
 ges: k in $[\frac{Schnecken}{h}]$ k =$\frac{40 Schnecken}{0,5 h}=80\frac{Schnecken}{h}$

 b: 1 Maler arbeitet einen Raum mit 60 m2 in 2,4 Stunden ab.
 ges: k in $[\frac{m^{2}}{h}]$ bezogen auf 1 Maler k =$\frac{60 m^{2}}{2,4 h }=25\frac{m^{2}}{h}$

 c: 5 Hühner legen 70 Eier in 4 Stunden.
 ges: k in $[\frac{Eier}{h}]$ bezogen auf 1 Huhn k = $\frac{14 Eier }{4 h }=3,5\frac{Eier}{h}$

3. 

 Ergänze die fehlenden Werte, fertige ein passendes Diagramm an und beantworte folgende Fragen rechnerisch und bestätige grafisch:

 Welcher y-Wert gehört zu x = 10? y = k\*x = 5,81 \* 10 = 58,1 grafisch: y = 58

 Welcher x – Wert gehört zu y = 30? $ x=\frac{y}{k}=\frac{30}{5,81}= $5,16 grafisch: x = 5,2