***ТАБЛИЦЫ***

***для устного счета***

***по алгебре 7- 11 классы***

***Подготовила :***

*учитель математики*

*МБОУ «Елантовская основная общеобразовательная школа»*

*Нижнекамского района Республики Татарстан*

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**Вычислите степени.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **А** | **В** | **С** | **D** | **E** |
| 1 | 53 | 102 | 23 | 33 | (– 4)2 |
| 2 | 24 | – 103 | – 22 | – 33 | – 42 |
| 3 | (– 2)5 | (– 10)4 | (– 2)2 | 34 | 43 |
| 4 | 0,22 | – 104 | 26 | (– 3)4 | (– 4)4 |
| 5 | (– 0,2)3 | 05 | 28 | – 34 | (– 8)2 |
| 6 | (–1)2 | 16 | (– 0,3)3 | 0,62 | (–2,5)2 |
| 7 | (– 1)5 | (–0,1)4 | 14 | 0,072 | 402 |
| 8 | (–0,3)2 | 0,23 | 03 | 18 | 105 |
| 9 | 1,32 | 2,52 | (–1,5)2 | 08 | –0,13 |
| 10 |  |  | –1,62 | (–1)8 | (–1,3)2 |
| 11 |  |  |  | 1,82 |  |
| 12 | (– 1,4)2 |  |  |  |  |
| 13 | 203 | 1,42 | – | – |  |
| 14 | 2002 | 0,152 |  |  | (– 10)6 |
| 15 |  | – 0,43 | 1003 |  |  |
| 16 |  |  | 0,14 | 0,13 | –1,12 |
| 17 |  |  |  | (– 0,1)2 | (– 1,1)2 |
| 18 |  | 0,33 |  | 104 | 07 |
| 19 | 0,252 | – 1,20 |  |  | (– 1)7 |
| 20 | – 0,43 |  |  | 1003 |  |

**Вычислите или представьте в виде степени, если возможно.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **A** | **B** | **C** | **D** |
| **1** | *х*8 ∙ *х*2 | *а*6 · *а*6 | (*а*7)2 | *с*9 : *с*3 |
| **2** | *х*8 : *х*2 | (*а*2)9 | *а*4 · *а*4 | *с*9 · *с*3 |
| **3** | (*х*8)2 | *а*7 : *а* | *а*4 : *а*4 | (*с*9)3 |
| **4** | *х*8 + *х*2 | *а*50 : *а*10 | (*а*4)4 | *с*9 + *с*3 |
| **5** | *х*8 – *х*2 | (*а*2)4 · *а*3 | *а*4 + *а*4 |  |
| **6** | *х*8 + *х*8 | 39 : (32)4 | *а7 + а*3 | (*с*5)4 · *с*4 |
| **7** |  | 67 · 62 · 6 | *а · а · а* | (*с*8)2 : (*с*4)4 |
| **8** |  |  |  |  |
| **9** | 38 · |  |  |  |
| **10** | 25 · 46 |  | (2*с*)5 : *с*5 | (*3с*)4 : *с*4 |
| **11** | 494 : 72 |  | 100 · 107 | 3*с*4 : *с*4 |
| **12** | 254 : 54 | 26 – 23 |  | *с*0 · *сm* |
| **13** |  | 29 : 23 |  | *с*2 · *с*2 · *с*2 |
| **14** |  | 64 · 36 | 104 · 102 · 10 | 27 · 310 |
| **15** | 82 · 54 | 57 · 125 | 97 · 27 | 1254 : 56 |
| **16** | 4*п*· 4*п*+1 | 32 · 215 | *с*8 · *сп* – 8 |  |
| **17** | 43 + *n* · 43 | 3*п* · 3*п +* 4 | *с2п*  · *сп* | *уп* · *у*5*п* |
| **18** | (4*п*)5 : 4*п* | 56*п*: 5*п* | *сп*· *сm* | *уп* · *у*2 |
| **19** | 4*п* + 4*п* | 32*п* · 27 | *сп* + *сm* | (*уп* + 2)3 : *у* |
| **20** | 4*п* · 4*п* | 68 + *п* · 62*п* – 8 | (*сп*)2 : с3 | *уп* · *у*4 – *п* |

**Упростите выражения.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **A** | **B** | **C** |
| **1** | *с* + 5*с* | 2*b* + 7*b* | 3*х* + 2*х* |
| **2** | – 3*с* + *с* | *b* + 4*b* | 7*х* – *х* |
| **3** | – 3*с* – 2*с* | *b*2 + 4*b*2 | 3*х* + 5*х* – 2 |
| **4** | – 3*с* · (– 2*с*) | *b*2 + *b*2 + *b*2 | 2*х* + 3 + 12 |
| **5** | *с*2 + 4*с*2 | *b*2 · *b*2 | – 6*х* – 16*х* |
| **6** | *с*2 · 4*с*2 | 2*b* + *b* + *b*2 | – 15*х* + 15*х* |
| **7** | *с*2 + 3*с*2 | 2*b* · *b* · *b*2 | – 2 + 9*х* – 9*х* |
| **8** | *с*2 · 3*с*2 | – 4*b* + *b*4 | – *х*2 – *х*3 |
| **9** | *с*3 + *с*2 + *с* | – 4*b* · *b*4 | – *х*2 – *х*2 |
| **10** | *с*3 + *с*3 + *с*3 | – *b* + *b*3 + *b* | 3*х*2 – 4*х*2 |
| **11** | *с*3 · *с*3 · *с*3 | – *b* + *b*3 – *b* | *х*5 – 2*х*2 |
| **12** | 2*с* + 3*с*2 + 4*с*2 | – *b* – *b*3 – *b* | *х*5 · 2*х*2 |
| **13** | 2*с* + 3*с*2 + 4*с*3 | 3*b*5 + *b*5 | *х*3 · *х*3 |
| **14** | 2*с* · 3*с*2 · 4*с*3 | 2*b*4 + *b*2 + *b*2 | *х*3 + *х*3 |
| **15** | – *с* – *с* – *с* | – 10*b* + *b*3 | – 3 + *х*4 + *х*4 |
| **16** | – *с*2 – *с*2 | – 10*b* + *b*3 + 3 | – 3 · *х*4 · *х*4 |
| **17** | – *с*2 + 5*с*2 | – 10*b* · *b*3 · 3 | *х*3 + *х*2 – *х* |
| **18** | – *с*2 + 5*с*3 | – *b*4 – 5*b*4 | 3*х*3 + 2*х*3 – *х*3 |
| **19** | *с* + 3*с* – *с*2 | 2*b*3 + 6*b*3 | *х*3 · *х*2 · *х* |
| **20** | – *с* + *с*2 + *с* | – *b*2 – *b*2 | 3*х*3 · 2*х*3 · (– *х*3) |

**Преобразуйте выражения, используя формулы сокращенного умножения.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **A** | **B** | **C** |
| **1** | (*х* – 1)2 | 9 – *х*2 | *с*2 – 16 |
| **2** | (*х* + 4)2 | 25 + *х*2 | (2*х* – 1)2 |
| **3** | *х*2 – 25 | 16 *х*2 – 1 | (*х* + 3*у*)2 |
| **4** | (2*а* – 1)(2*а* + 1) | (3*х* + 2)2 | 16 *х*2 – 25 |
| **5** | *а*2 + 4*а* + 4 | (7*х* – 1)2 | *х*2 + 6*х* + 9 |
| **6** | (3*а* – 1)2 | 49 *х*2 – 9 | (0,2 – *х*) (0,2 + *х*) |
| **7** | 16 – | 25*х*2 + 20*х* + 4 | (0,5 – *х*)2 |
| **8** | 25*х*2 – 10*х* + 1 | 16*у*2 – 24*у* + 9 | *х*2 + 9 |
| **9** | – 0,16 + *х*2 | (0,2*у* – 1) (0,2*у* + 1) | (11 – *х*) (11 + *х*) |
| **10** | *х*2 + 2*х* + 4 | – 2*х* + *х*2 + 1 | – 8*х* + *х*2 + 16 |
| **11** | 49 – *х*8 | 6*х* + 9 + *х*2 | – *х*8 + *у*2 |
| **12** | *х*2 – 64 | (8 + *х*) (8 – *х*) | *х*8 + *у*2 |
| **13** | *х*2 + 64 | – *у*10 + 1 | 25 *х*2 + 10*х* + 1 |
| **14** | *а*3 + 1 | (*х* + 0,5)2 | – *а*2 – 2*аb*  – *b*2 |
| **15** | (*а* – 2)(*а*2 + 2*а* + 4) | (*а* – 1)(*а*2 + *а* + 1) | 1 – *c*3 |
| **16** | 1 – 8*х*3 | (*а* + 3)(*а*2 – 3*а* + 9) | – *х*2 – 2*х*  – 1 |
| **17** | (*т*2 + 4)(*т*4 – 4*т*2 + 16) | 125 – *а*3 | (*а* – 4)(*а*2 + 4*а* + 16) |
| **18** | *п*3 + 1 | *а*3 + 0,001 | (*а* + 6)(*а*2 – *6а* + 36) |
| **19** | (*х* + 3)3 | (*х* – 2)3 | (*х* + 4)3 |
| **20** | (*х* – 1)3 | (1 + *х*)3 | (2*х* – 1)3 |

**Решите уравнения.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **A** | **B** | **C** |
| **1** | *х*2 = 25 | *х* + 7 = 0 | 2*х* = 5 |
| **2** | (*х* – 3)(*х* + 4) = 0 | 7*х* = 0 | 5*х* = 2 |
| **3** | *х*2 – 2*х* + 1 = 0 | 7*х* = 1 | 3*х* = 1 |
| **4** | 2*х* = 1 | *х*2 – *14х* + 49 = 0 | (*х* – 2)(*х* – 3) = 0 |
| **5** | = 1 | *х*2 – 81 = 0 | *х*2 + 8*х* = 0 |
| **6** | = 6 | *х*2 + 81 = 0 | = 0 |
| **7** | = 0 | = 0 | = 0 |
| **8** | = 0 | = 0 | = 0 |
| **9** | = 0 | *х*2 + 5 = 0 | = 0 |
| **10** | 5 *х*2 = 0 | *х*2 – 5*х* = 0 | = 0 |
| **11** | *х*2 – 4*х* + 3 = 0 | *х*2 – 12*х* + 36 = 0 | *х* – *х*2 = 0 |
| **12** | *х*2 + 9*х* = 0 | 2 – *х*2 = 0 | *х*2 – 4*х* + 4 = 0 |
| **13** | = 0 | *х*2 – 5*х* + 6 = 0 | *х*2 – 7*х* + 6 = 0 |
| **14** | = 0 | *х*2 – *3х* + 2 = 0 | *х*2 + 7*х* + 6 = 0 |
| **15** | *х*2 – 10*х*  + 25 = 0 | = 0 | *– х*2 + 4*х* = 0 |
| **16** | *х*2 – 12 = 0 | = 0 | – 2 *х*2 = 0 |
| **17** | *х*2 + 6 = 0 | = 0 | 5*х = х*2 |
| **18** | *х*2 + 6*х* = 0 | = 0 | 64 – *х*2 = 0 |
| **19** | *х* + 6 = 0 | 10 *х*2 = 0 | *х*2 = 11 |
| **20** | 6*х* = 0 | (*х* + 3)(*х* + 7) = 0 | *х*2 + *х* – 2 = 0 |

**Вычислите.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **A** | **B** | **C** | **D** | **E** |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **4** |  |  |  |  |  |
| **5** |  |  |  |  |  |
| **6** |  |  |  |  |  |
| **7** |  |  |  |  |  |
| **8** |  |  |  |  |  |
| **9** |  |  |  |  |  |
| **10** |  |  |  |  |  |
| **11** | ()2 | ()2 | ()2 |  |  |
| **12** | (6)2 | (5)2 | (3)2 |  |  |
| **13** |  |  |  |  |  |
| **14** |  |  |  |  |  |
| **15** |  |  |  |  |  |
| **16** |  |  |  |  |  |
| **17** | ()3 | ()2 | ()3 |  |  |
| **18** |  |  |  |  |  |
| **19** | (– 1)(+ 1) | (1 – )(1 + ) | (2 + )(2 – ) |  |  |
| **20** | (2 – )2 | (1 + )2 | (2 – )2 |  |  |

**Решите неравенства.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **A** | **B** | **C** |
| **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **4** |  |  |  |
| **5** |  |  |  |
| **6** |  |  |  |
| **7** |  |  |  |
| **8** |  |  |  |
| **9** |  |  |  |
| **10** |  |  |  |
| **11** |  |  |  |
| **12** |  |  |  |
| **13** |  |  |  |
| **14** |  |  |  |
| **15** |  |  |  |
| **16** |  |  |  |
| **17** |  |  |  |
| **18** |  |  |  |
| **19** |  |  |  |
| **20** |  |  |  |

**Вычислите.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **A** | **B** | **C** | **D** | **E** |
| **1** | 3–2 |  | 62 |  |  |
| **2** | 2–3 |  | 6–2 | 42 | 1002 |
| **3** |  |  |  | 4–2 | 100–1 |
| **4** |  | 3–3 |  |  |  |
| **5** | (0,1)–4 | (– 3)–3 |  |  |  |
| **6** | (0,02)–2 |  |  | (0,4)2 | 0,13 |
| **7** |  | (0,3)–2 |  | (0,4)–2 | 0,1–3 |
| **8** |  | (– 0,3)–2 | (– 0,2)–1 |  |  |
| **9** |  |  | (0,2)–2 |  |  |
| **10** |  |  |  |  | 105 · 100–3 |
| **11** |  |  |  | (– 4)–2 |  |
| **12** |  |  |  |  |  |
| **13** | (– 1)–1 |  |  |  |  |
| **14** | (– 2)–2 |  |  |  |  |
| **15** |  |  | 25 · 2–6 |  |  |
| **16** | (– 0,5)–2 |  | (22)–2 |  |  |
| **17** |  |  |  |  |  |
| **18** | 2–4 · 23 | 5–3 · 55 |  |  |  |
| **19** |  | 26 · 2–10 |  |  | 3–7 · 35 |
| **20** |  |  |  |  |  |

**Вычислите.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **A** | **B** | **C** | **D** | **E** | **F** |
| **1** | 23 | 24 | 25 | 32 | 33 | 34 |
| **2** | ( – 1)4 | ( – 1)6 | ( – 1)8 | ( – 1)10 | ( – 1)12 | ( – 1)2 |
| **3** | ( – 0,3)3 | ( – 0,2)2 | ( – 0,2)3 | ( – 0,3)4 | ( – 0,3)2 | ( – 0,2)4 |
| **4** | 0,22 | 0,34 | 0,33 | 0,32 | 0,24 | 0,23 |
| **5** | ( – 1)5 | ( – 1)7 | ( – 1)9 | ( – 1)11 | ( – 1)13 | ( – 1)15 |
| **6** | ( – 16)0 | 250 | ( – *а*)0 | (*х + у*)0 | 10000 | ( – 16*а*)0 |
| **7** | ( – 1)– 2 | ( – 1)– 4 | ( – 1)– 6 | ( – 1)– 100 | ( – 1)– 22 | ( – 1)– 12 |
| **8** | 3– 2 | 3– 3 | 3– 4 | 2– 2 | 2– 3 | 2– 4 |
| **9** | ( – 1)– 7 | ( – 1)– 3 | ( – 1)– 1 | ( – 1)– 5 | ( – 1)– 9 | ( – 1)– 11 |
| **10** | ( – 2)– 3 | ( – 2)– 2 | ( – 2)– 4 | ( – 3)– 2 | ( – 3)– 3 | ( – 3)– 4 |
| **11** | 2–3 · 24 | 3–4 · 36 | 24 · 2–3 | 108 · 10–5 · 10–6 | 5–15 · 516 |  |
| **12** | 24 : 22 | 3– 4 : 36 | 5– 3 : 5– 3 | 3– 1 : 3 | 4– 8 : 4– 9 |  |
| **13** |  |  |  |  |  |  |
| **14** | (3– 2)– 1 | (2– 4)– 1 | (5 2)– 2 | (2– 2)– 1 | (2– 2)– 3 | (2– 4)2 |
| **15** |  |  |  |  |  |  |
| **16** |  |  |  |  |  |  |
| **17** |  |  |  |  |  |  |
| **18** |  |  |  |  |  |  |
| **19** |  |  |  |  |  |  |
| **20** |  |  |  |  |  |  |
| **21** |  |  |  |  |  |  |
| **22** |  |  |  |  |  |  |

**Представьте в виде корня:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **23** |  |  |  |  |  |  |
| **24** |  |  |  |  |  |  |

**Представить в виде степени:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **25** |  |  |  |  |  |  |
| **26** |  |  |  |  |  |  |

**Найти производную:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **A** | ***B*** | **C** | **D** | **E** | **F** | **G** |
| **1** | 510 | *π* | 90 |  |  | 73 | (*π* + 6)3 |
| **2** | 2*х* | *х* | – 10*х* | 0,2*х* | *πх* | – *х* |  |
| **3** |  |  |  |  |  |  |  |
| **4** | *х*3 | *х*4 | *х*5 | *х*6 | *х*7 | *х*8 | *х*100 |
| **5** | 2*х*5 | 3*х*4 | 7*х*3 | 8*х*2 | 9*х*6 | 10*х*7 | 11*х*8 |
| **6** | (*х –* 3)3 | (*х +* 2)2 | (*х –* 6)4 | (*х* + 7)5 | (8 + *х*)6 | (7 – *х*)7 | (9 – *х*)5 |
| **7** | (2*х –* 5)4 | (3*х +* 6)3 | (7 – 5*х*)2 | (8 – 2*х*)3 | (7*х –* 8)4 | (5 – 3*х*)3 | (7 – 8*х*)2 |
| **8** |  |  |  |  |  |  |  |
| **9** |  |  |  |  |  |  |  |
| **10** |  |  |  |  |  |  |  |
| **11** |  |  |  |  |  |  |  |
| **12** |  |  |  |  |  |  |  |
| **13** | *sin* 2*x* | *sin* 3*x* | *sin* | *sin* 5*x* | *sin* (3*x –* ) | *sin* (4*x+* ) | *sin* (2 – 5*x*) |
| **14** | *cos* 3*x* | *cos* 2*x* | *cos* 5*x* | *cos*(*x –* ) | *cos*(2*x +* ) | *cos*() | *cos*() |
| **15** | *tg* 2*x* | *tg* (3*x –*) |  | *tg* 5*x* |  | *tg* 7*x* | *tg* 8*x* |
| **16** | *ctg* 3*x* |  |  | *ctg* 2*x* | *ctg* 7*x* |  | *ctg* 4*x* |
| **17** | 2*sin*3*x* | *3sin*2*x* | 4*sin*() | 2*sin*() | 3*sin*() | 4*sin* | 3*sin* |
| **18** |  |  |  |  |  |  |  |
| **19** |  |  |  |  |  |  |  |
| **20** |  |  |  |  |  |  |  |
| **21** |  |  |  |  |  |  |  |
| **22** |  |  |  |  |  | x) |  |
| **23** |  |  |  |  |  |  |  |
| **24** |  |  |  |  |  |  |  |
| **25** |  |  |  |  |  |  |  |
| **26** | *e*2*x* | *e*3*x* | *2e*5*x* | *3ex* | *4e*2*x* |  | *ecosx* |
| **27** | 2*x* | 32*х* |  | 52*х –* 1 | 7sin *x* | 82cos*x* | 9tg*x* |
| **28** | 2ln*x* | ln(*x* + 1) | ln(*x*2 – 2) | ln2*x* | 3ln3*x* | 2ln3(*x –* 5) | 3ln(sin*x*) |
| **29** | log3*x* | log42*x* |  | log7(5*x –* 1) | lg(2*x –* 1) | 2lg(sin*x*) |  |

**Вычислить первообразную:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **A** | | **B** | | **C** | **D** | | **E** | | | **F** |
| **1** | 1 | | 5 | | 7 | π | | *е* | | | – 6 |
| ***2*** | *x* | | 7*х* | |  | *ех* | | – 2*х* | | |  |
| ***3*** | *х5* | | *х4* | | *х3* | *х2* | | *х*6 | | | *х*7 |
| **4** | 7*х*6 | |  | |  | 3*х*8 | |  | | | 4*х*10 |
| **5** | 7*х* + 1 | | (2*х* – 1)2 | | (6*х* – 5)3 | (3 – 2*х*)4 | | 5 + 3*х* | | | (6 – 7*х*)5 |
| **6** | 3·(5х + 1)2 | | 8·(6х – 5)3 | | 4·(5 – 6х)3 | 7·(4 + 7х)4 | | 3·(8 – 5х)2 | | | 5·(2х – 3)4 |
| **7** |  | |  | |  |  | |  | | |  |
| **8** |  | |  | |  |  | |  | | |  |
| **9** |  | |  | |  |  | |  | | |  |
| **10** |  | |  | |  |  | |  | | |  |
| **11** |  | |  | |  |  | |  | | |  |
| **12** |  | |  | |  |  | |  | | |  |
| **13** |  | |  | |  |  | |  | | |  |
| **14** |  | |  | |  |  | |  | | |  |
| **15** |  | |  | |  |  | |  | | |  |
| **16** |  | |  | |  |  | |  | | |  |
| **17** |  | |  | |  |  | |  | | |  |
| **18** |  | |  | |  |  | |  | | |  |
| **19** |  | |  | |  |  | |  | | |  |
| **20** |  | |  | |  |  | |  | | |  |
| **21** |  | |  | |  |  | |  | | |  |
| **22** |  | |  | | 5 · 35х+1 | 6 · | | 2 · | | | 3 · |
| **23** |  | |  | |  |  | |  | | |  |
| **Вычислить логарифмы:** | | | | | | | | | | | |
|  | **A** | **B** | | **C** | | | **D** | | **E** | **F** | |
| **1** |  |  | |  | | |  | |  |  | |
| **2** |  |  | |  | | |  | |  |  | |
| **3** |  |  | |  | | |  | |  |  | |
| **4** |  |  | |  | | |  | |  |  | |
| **5** |  |  | |  | | |  | |  |  | |
| **6** |  |  | |  | | |  | |  |  | |
| **7** |  |  | |  | | |  | |  |  | |
| **8** |  |  | |  | | |  | |  |  | |
| **9** |  |  | |  | | |  | |  |  | |
| **10** |  |  | |  | | |  | |  |  | |
| **11** |  |  | |  | | |  | |  |  | |
| **12** |  |  | |  | | |  | |  |  | |
| **13** |  |  | |  | | |  | |  |  | |
| **14** |  |  | |  | | |  | |  |  | |
| Найдите число *х*: | | | | | | | | | | | |
| **15** |  |  | |  | | |  | |  |  | |
| **16** |  |  | |  | | |  | |  |  | |
| **17** |  |  | |  | | |  | |  |  | |
| **18** |  |  | |  | | |  | |  |  | |
| **19** |  |  | |  | | |  | |  |  | |
| **20** |  |  | |  | | |  | |  |  | |
| **21** |  |  | |  | | |  | |  |  | |
| **22** |  |  | |  | | |  | |  |  | |
| **23** |  |  | |  | | |  | |  |  | |

***Источник информации:*** Журнал «Математика в школе», 1991 год, №4 + собственные разработки