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 Kod ucznia

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| --- |
| Miejsce na metryczkę ucznia |

**Instrukcja dla ucznia:**

Zanim przystąpisz do rozwiązywania testu, wpisz czytelnie swoje imię i nazwisko, datę oraz miejsce urodzenia, nazwę szkoły oraz imię i nazwisko nauczyciela przygotowującego Cię do konkursu na oddzielnie przygotowanej karcie uczestnika. Kartę włóż do koperty. Kopertę zaklej.

Przed Tobą 23 zadania, za poprawne wykonanie wszystkich możesz uzyskać **40** punktów. Przy każdym zadaniu masz podaną ilość punktów, które możesz uzyskać za dobre rozwiązanie.

Masz **90 minut** na rozwiązanie zadań z arkusza i przeniesienie odpowiedzi na kartę odpowiedzi.

Przestrzegaj następujących zasad:

1. Sprawdź czytelność i kompletność arkusza, który zawiera 23 zadania.
2. Wszelkie usterki zgłoś nauczycielowi.
3. Rozwiązania zapisuj długopisem. Nie używaj ołówka, korektora i kalkulatora.
4. Na odwrocie tej strony znajduje się karta odpowiedzi do wszystkich zadań.
5. W zadaniach **od 1 do 16** podane są 4 odpowiedzi: A, B, C, D. Wybierz tylko jedną odpowiedź i wpisz wyraźnie, w tabeli na karcie odpowiedzi, znak **X** w kratce z odpowiednią literą.
6. Jeśli zaznaczysz błędnie odpowiedź, otocz ją kółkiem i wpisz **X** w kratkę z inną literą.
7. Odpowiedzi liczbowe do zadań **od 17 do 20** wpisz z namysłem i starannie do karty odpowiedzi.
8. Rozwiązania i odpowiedzi do zadań **od 20 do 23** wpisz czytelnie w wyznaczonym miejscu.
9. Ostatnie 2 strony arkusza są przeznaczone na brudnopis. Zapisy w brudnopisie nie będą sprawdzane. Brak wpisu w tabeli na karcie odpowiedzi to brak punktów.
10. Sprawdź, czy dobrze przeniosłeś odpowiedzi do wszystkich zadań na kartę odpowiedzi.
11. Po zakończeniu pracy arkusz z zestawem zadań, kartę odpowiedzi oraz kopertę z kartą uczestnika pozostaw na swojej ławce.

POWODZENIA !!!

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Zadania | 1 - 20 | 21 | 22 | 23 | SUMA |
| Max. punktacja | **30** | **3** | **3** | **4** | **40** |
| Ilość uzysk. punktów |  |  |  |  |  |

Podpisy:

**Karta odpowiedzi:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Numer zadania** | **Liczba punktów za zadanie** | **Miejsce na odpowiedź ucznia** |  |
| **A** | **B** | **C** | **D** |  |
| **1** | **1** |  |  |  |  |  |
| **2** | **1** |  |  |  |  |  |
| **3** | **1** |  |  |  |  |  |
| **4** | **1** |  |  |  |  |  |
| **5** | **1** |  |  |  |  |  |
| **6** | **1** |  |  |  |  |  |
| **7** | **1** |  |  |  |  |  |
| **8** | **1** |  |  |  |  |  |
| **9** | **1** |  |  |  |  |  |
| **10** | **1** |  |  |  |  |  |
| **11** | **2** |  |  |  |  |  |
| **12** | **2** |  |  |  |  |  |
| **13** | **2** |  |  |  |  |  |
| **14** | **2** |  |  |  |  |  |
| **15** | **2** |  |  |  |  |  |
| **16** | **2** |  |  |  |  |  |
| **17** | **2** |  |  |
| **18** | **2** | 1) |  |
| 2) |  |
| 3) |  |
| **19** | **2** |  |  |
| **20** | **2** |  |  |
| **SUMA PUNKTÓW (wypełnia Komisja)** |  |

Podpisy sprawdzających:

|  |  |
| --- | --- |
| KOD UCZNIA |  |

W zadaniach od **1** do **16** wybierz jedną z podanych odpowiedzi a następnie w karcie odpowiedzi wpisz znak **X** w odpowiedniej kratce

**Zadanie 1. 1p**

****

Położenie punktów M i N na osi określają współrzędne:

|  |  |  |  |
| --- | --- | --- | --- |
| 1. M = 5,725,

 N = 5,785 | **B**. M = 5,71, N = 5,75 | **C**. M = 5,665, N = 5,785 | **D**. M = 5,725, N = 5,775 |

**Zadanie 2. 1p**

Pierwszego dnia turysta przeszedł 30% zaplanowanej trasy, drugiego dnia – połowę reszty trasy, zaś trzeciego dnia 14 km i dotarł do celu. Ile kilometrów liczyła trasa, którą przeszedł turysta?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 70km | **B**. 28km | **C**. 40km  | **D**. 42km  |



**Zadanie 3. 1p**

Diagram (rys. obok) przedstawia informacje dotyczące ilości drzew owocowych w sadzie. Wiadomo, że rośnie w nim 48 grusz.

Wyrażenie pozwalające obliczyć łączną liczbę śliw i jabłoni w tym sadzie to:

|  |  |
| --- | --- |
| **A**. 0,5٠48 + ٠48  |  **B**. ٠48 + 0,25٠48 |
| **C.** 48 + 24 + 12 + 12 | **D**. 0,125 ٠24 + ٠48 |

**Zadanie 4. 1p**

Przed grą Michał miał o 5 pionków więcej niż Robert. Robert wygrał od Michała 4 pionki. Wskaż zdanie prawdziwe. Po zakończeniu gry:

|  |  |
| --- | --- |
| **A**. Michał ma o 3 pionki więcej od Roberta | **B.** Robert ma o 3 pionki więcej od Michała. |
| **C.** Michał ma o 1 pionek więcej od Roberta. | **D**. Robert ma o 1 pionek więcej od Michała |

**Zadanie 5. 1p**

Dwa boki trójkąta różnobocznego mają długości 0,8 i 1,9. Długość trzeciego boku wyraża się liczbą naturalną. Obwód trójkąta wynosi:

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 3,7 | **B**. 4,6 | **C**. 4,7 | **D**. 3,5 |

**Zadanie 6. 1p**

Średnia ocen ze sprawdzianu z matematyki w klasie VI a liczącej 22 uczniów wynosi 4,5. W klasie VI b liczącej 28 uczniów średnia z tego samego sprawdzianu jest równa 3,75. Które wyrażenie pozwala obliczyć, jaka była średnia ocen ze sprawdzianu z matematyki dla wszystkich uczniów klas szóstych?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**.  | **B**.   | **C**.  | **D**.   |

**Zadanie 7. 1p**

Suma trzech kątów, z których drugi jest dwa razy większy od pierwszego, a trzeci jest o 60º mniejszy od sumy dwóch pozostałych jest równa kątowi półpełnemu. Jaką miarę ma drugi kąt?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 80º | **B**. 40º  | **C**. 20º | **D**. 120º |

**Zadanie 8. 1p**

Sposób obliczenia liczby x przedstawiono na grafie obok. Oblicz x, jeśli:

1. to liczba przeciwna do 4,
2. to liczba odwrotna do (),
3. to odległość liczby (-3) od liczby 0 na osi liczbowej.

|  |  |
| --- | --- |
| **A**. x = 12 | **B**. x = 8 |
| **C.** x =(-16) | **D.** x = (- ) |

**Zadanie 9. 1p**

Wracając ze szkoły do domu Maciek musi przejść obok basenu i apteki. Ze szkoły do basenu może dojść trzema różnymi drogami, z basenu do apteki czterema, a z apteki do domu trzema. Ile różnych dróg prowadzi ze szkoły do domu Maćka?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 4 | **B**. 10 | **C**. 3 | **D**. 36 |

**Zadanie 10. 1p**

Państwo Kowalscy chcą wyłożyć balkon w kształcie prostokąta o wymiarach 216 cm x120 cm jednakowymi kwadratowymi kafelkami o możliwie największym boku, którego długość w centymetrach wyraża się liczbą naturalną. Ile najmniej kafelków muszą kupić, jeśli kafelki nie będą przycinane?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 180 | **B**. 45 | **C**. 405  | **D**. 15 |

**Zadanie 11. 2p**

Na przyjęcie urodzinowe córki mama kupiła 10 balonów, za które zapłaciła 16 zł. Wśród balonów były: czerwone po 1 zł za sztukę, zielone po 2 zł za sztukę i srebrne po 4 zł za sztukę. Ile srebrnych balonów kupiła mama?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 1 | **B**. 2 | **C**. 3 | **D**. 4 |

**Zadanie 12. 2p**

|  |  |
| --- | --- |
| **Cena za 1kg** | Agata kupiła tę samą ilość gruszek co śliwek oraz 40 dag jabłek. Za całe zakupy zapłaciła 13,40 zł. Korzystając z dołączonego cennika oblicz ile ważyły gruszki.Gruszki ważyły: |
| **gruszki** | **5,15 zł** |
| **jabłka** | **3,80 zł** |
| **śliwki** | **4,75 zł** |

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 3 kg | **B**. 2,80 kg | **C**. 1,20 kg | **D**. 2,40 kg |

**Zadanie 13. 2p**

Papier do pakowania prezentów ma kształt sześciokąta foremnego o powierzchni 2700 cm². Terenia odcięła część arkusza (zaznaczoną na rysunku kolorem szarym) i wykorzystała ją do zapakowania prezentu.

Jaką powierzchnię miał fragment arkusza wykorzystanego do zapakowania prezentu?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 180 dm² | **B**. 202,5 dm² | **C**. 18 dm² | **D**. 2025 cm² |

**Zadanie 14. 2p**

 Do zbudowania modelu graniastosłupa prostego zużyto dwa patyczki długości 6 cm, dwa długości 8 cm i 5 patyczków długości 10 cm. Ile cm2 papieru potrzeba na oklejenie jego wszystkich ścian bocznych?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 680 cm² | **B**. 340 cm² | **C**. 288 cm² | **D**. 240 cm² |

**Zadanie 15. 2p**

Nauczyciel matematyki przygotował na lekcję 80 kartoników w kształcie rombów i prostokątów. Wśród nich 60% kartoników to romby, zaś 55% kartoników to prostokąty. Ile kartoników ma kształt kwadratu?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 12 | **B**. 32 | **C**. 0 | **D**. 80 |

**Zadanie 16. 2p**

Która z liczb postaci: **35² - 5**, **36² - 6**, **39² - 9**, **41² - 1** różni się cyfrą jedności od pozostałych?

|  |  |  |  |
| --- | --- | --- | --- |
| **A**. 35² - 5 | **B**. 36² - 6 | **C**. 39² - 9 | **D**. 41² - 1 |

**W ZADANIACH: 17, 18, 19 I 20 OTRZYMANY WYNIK WPISZ DO ODPOWIEDNIEJ KRATKI NA KARCIE ODPOWIEDZI!**

**Zadanie 17. 2p**

Tabelka zawiera kombinacje cyfr i wskazówki dotyczące trzycyfrowego szyfru. Liczby w kolumnie **A** informują o tym, ile cyfr znajduje się na właściwym miejscu.

Z kolumny **B** dowiesz się, ile cyfr jest dobrych, ale nie stoi na swoim miejscu.

Odgadnij i wpisz do kratki szyfr.

|  |  |  |
| --- | --- | --- |
|  | **A** | **B** |
| **7 9 1** | 0 | 0 |
| **1 8 3** | 0 | 2 |
| **9 3 6** | 1 | 1 |
|  |  |  |

|  |
| --- |
| SZYFR |
|  |  |  |
|  |  |  |

**Zadanie 18. 2p**

Wiedząc, że

222 222 222 **:** 3 = 74 074 074

74 074 074 ٠5 = 370 370 370

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| uzupełnij: | 1) | 888 888 888 | **:** | 12 | = |  |  |
|  |  |  |  |  |  |  |  |
|  | 2) | 370 370 370  | **:** | 0,5 | = |  |  |
|  |  |  |  |  |  |  |  |
|  | 3) | 740 740 740 | **٠** | 0,3 | = |  |  |
|  |  |  |  |  |  |  |  |

**Zadanie 19. 2p**

Na świadectwie kl. V Jacek miał dziewięć ocen: czwórki, piątki i szóstkę. Czwórek było o dwie więcej niż piątek. Oblicz średnią ocen Jacka. Wynik podaj z dokładnością do części setnych.

|  |  |  |
| --- | --- | --- |
| Średnia ocen Jacka wynosiła: |  | . |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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**Zadanie 20. 2p**

Krzyś obliczył, że jeśli sprząta pokój sam, to zajmuje mu to 28 min, natomiast razem z młodszym bratem sprzątają pokój w 20 min. Ile czasu potrzebuje młodszy brat Krzysia, aby samodzielnie posprzątać pokój?

|  |  |  |
| --- | --- | --- |
| Młodszy brat Krzysia potrzebuje: |  | minut. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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**Rozwiązując zadania 21, 22, 23 wpisz rozwiązanie i odpowiedź w wyznaczonym kratkami miejscu. Pamiętaj o zapisywaniu wszystkich obliczeń i odpowiedzi. Błędne obliczenia przekreślaj i zapisuj nowe.**

**Zadanie 21. 3p**

Po wydobyciu gliny powstał dół w kształcie prostopadłościanu o głębokości 2,5 m.

Długość dołu jest o 2 m większa od jego szerokości. Gdyby wykopany dół był tak samo długi jak szeroki, to wydobyto by o 20 m3 mniej gliny. Ile m3 gliny wykopano?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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**Odpowiedź**: …………………………………………………………………………………………….

**Zadanie 22. 3p**

Pan Nowak przejechał samochodem trasę Odcinkowo – Kątowo przez Figury z prędkością 40 km/h. Drogę z Figur do Kątowa przejechał w czasie o 9 minut krótszym niż drogę z Odcinkowa do Figur. Ile wynosi odległość między Odcinkowem a Kątowem, jeśli droga z Odcinkowa do Figur stanowi  całej trasy?

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**Odpowiedź**: …………………………………………………………………………………………….

**Zadanie 23. 4p**

W wierzchołkach i na brzegu prostokątnego trawnika o obwodzie 63 m posadzono 6 drzew w równych odległościach jedno od drugiego. 20% powierzchni trawnika przeznaczono na żwirowe ścieżki. 1 tona żwiru wystarcza na wysypanie 15 m² powierzchni.

Ile ton żwiru potrzeba na wysypanie wszystkich ścieżek?

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**Odpowiedź:** ……………………………………………………………………………………………

**BRUDNOPIS**

**Pamiętaj! Wszelkie zapisy obliczeń i rozwiązań na tej stronie**

 **nie będą sprawdzane.**

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**BRUDNOPIS**

**Pamiętaj! Wszelkie zapisy obliczeń i rozwiązań na tej stronie**

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