9 Venture – Review Name: Key

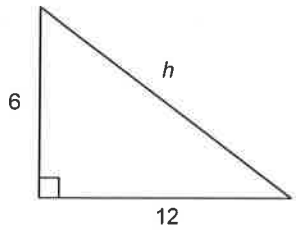
On separate paper prove your answers mathematically or explain the logic behind your choice. If you feel you *need* a calculator for a question write "C" next to the question number on your answer sheet.

1. Simplify 7^2.
   a. 28 (b.) 49 c. 14 d. 98

2. The area of a square is 24 m^2. Find its side length.
   (a.) $\sqrt{24}$ m b. $\sqrt{6}$ m c. $\sqrt{96}$ m d. 6 m

Estimation

3. Find the length of the hypotenuse. Give your answer to 1 decimal place.



$h^2 = 6^2 + 12^2$

$h = \sqrt{36+144}$

$= \sqrt{180}$

$\sqrt{169} < \sqrt{180} < \sqrt{196}$

$13 \quad\quad 14$

   a. 144.0 b. 10.4 (c.) 13.4 d. 36.0

4. Which triangle with each set of side lengths is a right triangle?
   a. 5 cm, 7 cm, and 9 cm c. 3 cm, 5 cm, and 7 cm
   (b.) 6 cm, 8 cm, and 10 cm d. 8 cm, 10 cm, and 12 cm

Pyth. triples

5. In a right triangle, the length of the hypotenuse is 18 m and the length of one of the legs is 15 m. Find the length of the other leg. Round your answer to the nearest tenth.
   a. 5.0 m b. 6.8 m (c.) 9.9 m d. 23.4 m

$18^2 = 15^2 + x^2$

$x^2 = 18^2 - 15^2$

$x = \sqrt{18^2 - 15^2}$

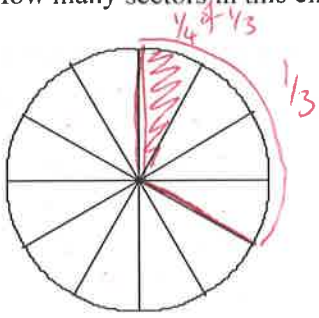
6. Find the product of –4 and –7.
   a. –11 b. –28 (c.) +28 d. +11

7. Find this quotient. $(-70) \div (-7)$
   a. –63 b. –10 (c.) +10 d. +63

8. Evaluate. $-13 + 9 \div (-3) + 9$ $= -13 - 3 + 9$
   a. 1 b. –1 c. 7 (d.) –7

Pictorially

9. How many sectors in this circle should be shaded to represent $\frac{1}{4} \times \frac{1}{3}$?



$\frac{1}{4}$ of $\frac{1}{3}$

a. 11 b. 2 c. 3 d. 1

10. Find $\frac{2}{3}$ of $\frac{5}{8}$. $\frac{2^1}{3} \times \frac{5}{8_4} = \frac{5}{12}$

a. $\frac{7}{11}$ b. $\frac{5}{12}$ c. $\frac{7}{24}$ d. $\frac{10}{11}$

11. Multiply. $1\frac{2}{3} \times 4\frac{1}{4}$ $= \frac{5}{3} \times \frac{17}{4} = \frac{}{12}$

a. $5\frac{1}{6}$ b. $4\frac{1}{6}$ c. $4\frac{1}{4}$ d. $7\frac{1}{12}$

12. Find the area of a rectangle with length $12\frac{1}{3}$ m and width $1\frac{1}{3}$ m. $\frac{37}{3} \times \frac{4}{3}$

a. $13\frac{1}{3}$ m^2 b. $12\frac{1}{9}$ m^2 c. $16\frac{4}{9}$ m^2 d. $16\frac{1}{9}$ m^2

Reduce

13. Find this quotient. $\frac{8}{12} \div 4$ $= \frac{8^2}{12_6} \times \frac{1}{4_1} = \frac{1}{6}$

a. 6 b. $\frac{1}{6}$ c. $\frac{2}{3}$ d. $\frac{8}{3}$

14. Brenda has $\frac{5}{6}$ of a pie to divide evenly among 4 people. $\frac{5}{6} \div 4$ $= \frac{5}{6} \times \frac{1}{4}$

What fraction of a pie does each person get?

a. $\frac{3}{10}$ b. $\frac{1}{4}$ c. $\frac{5}{24}$ d. $\frac{1}{6}$

15. Divide. $\frac{6}{7} \div \frac{7}{35}$ $= \frac{6}{7} \times \frac{35^5}{7_1} = \frac{30}{7} = 4\frac{2}{7}$

a. $\frac{7}{30}$ b. $\frac{6}{35}$ c. $1\frac{1}{5}$ d. $4\frac{2}{7}$

16. Divide. $2\frac{1}{3} \div 1\frac{4}{5}$ $= \frac{7}{3} \div \frac{9}{5} = \frac{7}{3} \times \frac{5}{9}$

a. $4\frac{1}{5}$ b. $\frac{27}{35}$ c. $1\frac{8}{27}$ d. $\frac{5}{21}$

$\frac{2}{3}$ is 600 so $\frac{1}{3}$ is 300 ∴ $\frac{3}{3}$ is 900

17. Sally pays $600 per month for rent. This represents $\frac{2}{3}$ of her monthly salary. $\frac{2}{3} \times x = 600$

What is Sally's monthly salary? $x = 600 \div \frac{2}{3}$

a. $400 b. $1800 c. $900 d. $1200 $= 600 \times \frac{3}{2}$

18. Which operation would you do first?

$\frac{6}{7} - \frac{8}{9} + \frac{7}{6} \div \frac{7}{6} \times \frac{8}{9}$

a. Addition b. Subtraction c. Multiplication d. Division

19. Evaluate. $\frac{2}{3} + \frac{3}{5} \times \frac{15}{4} = \frac{2}{3} + \frac{9}{4} = \frac{8}{12} + \frac{27}{12} = \frac{35}{12}$ $\frac{1}{12}$ less than 3

Reduce $\frac{1}{12} < 3$.

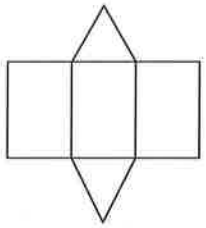
a. $2\frac{11}{12}$ b. $4\frac{3}{4}$ c. $1\frac{1}{4}$ d. $2\frac{1}{12}$

20. What shapes do you need to make a hexagonal pyramid?

a. 1 hexagon and 6 triangles c. 2 hexagons and 6 triangles

b. 2 hexagons and 6 rectangles d. 1 hexagon and 6 rectangles

21. Name the polyhedron that can be made from this net.

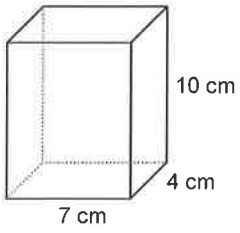


a. Rectangular pyramid c. Rectangular prism

b. Triangular prism d. Triangular pyramid

22. Find the surface area of this right rectangular prism.

2( )



$4 \times 10 \times 2 + 7 \times 10 \times 2 + 4 \times 7 \times 2$

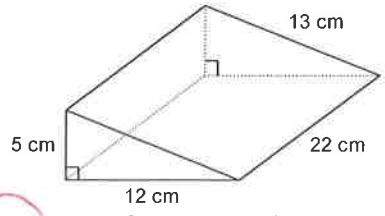
$= 2(40 + 70 + 28)$

$= 2(138)$

$= 276$

a. 138 cm² b. 21 cm² c. 280 cm² d. 276 cm²

23. Calculate the surface area of this right triangular prism.



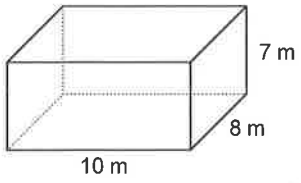
$5 \times 12 + 22 \times 13 + 22 \times 12 + 5 \times 22$

$= 60 + 286 + 264 + 110$

$= 720$

a. 720 cm² b. 868 cm² c. 660 cm² d. 780 cm²

24. Find the volume of this rectangular prism.



$V = 7 \times 8 \times 10$
$= 560$

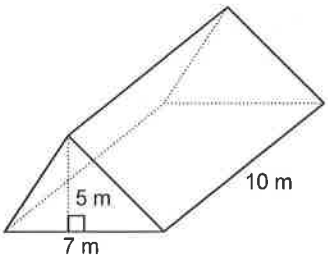
a. 412 m³ b. 100 m³ c. 206 m³ d. 560 m³

25. A full tray of fudge is shared equally among 24 students.
The tray measures 12 cm by 9 cm and is 2 cm deep.
How much fudge, to the nearest tenth of a cubic centimetre, does each student get?

$\frac{12 \times 9 \times 2}{24} = 9$

a. 11 cm³ b. 4.5 cm³ c. 3.8 cm³ d. 9 cm³

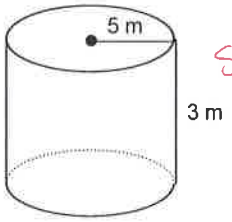
26. Find the volume of this triangular prism.



$V = \frac{5 \times 7}{2} \times 10$
$= 25 \times 7$
$= 175$

a. 350 m³ b. 88 m³ c. 175 m³ d. 105 m³

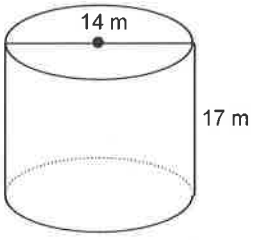
27. Find the surface area of this cylinder. Round your answer to the nearest tenth of a square metre.



$SA = 2\pi r^2 + 2\pi rh$
$= 2\pi 25 + 2\pi 5 \times 3$
$= 50\pi + 30\pi$
$= 80\pi$

a. 172.8 m² b. 204.2 m² c. 251.3 m² d. 235.6 m²

28. Find the volume of this cylinder. Round your answer to the nearest tenth.



$V = \pi r^2 h$
$= \pi 49 \times 17$
$\approx 2616.9 \text{ m}^3$

a. 747.7 m³ b. 373.8 m³ c. 2616.9 m³ d. 238 m³

29. Write 9% as a decimal.

$9\% = \frac{9}{100} = 0.09$

a. 0.09 b. 0.9 c. 9 d. 0.009

30. Write this fraction as a percent.
$\frac{87}{50}$
a. 184% b. 17.4% c. 174% d. 137%

31. Find 170% of 58.
a. 9.86 b. 98.6 c. 986 d. 2.28

32. The price of a book increased from \$1.90 to \$8.10. What is the percent increase in price?
a. 326% b. 77% c. 4% d. 23%

33. The sales taxes are 14%. Find the tax paid for a pair of running shoes that costs \$115.
a. \$16.10 b. \$161.00 c. \$1.22 d. \$2.25

34. Find the total cost of a \$363.99 airline ticket with sales taxes of 15%.
a. \$418.59 b. \$363.99 c. \$309.39 d. \$417.68

35. The regular price of a watch is \$24.99. It is on sale at a discount of 35%.
Find the sale price of the watch.
a. \$24.64 b. \$8.75 c. \$33.74 d. \$16.24

36. Write the part-to-whole ratio 12:13 as a fraction.
a. $\frac{13}{6}$ b. $\frac{12}{13}$ c. $\frac{6}{7}$ d. $\frac{7}{6}$

37. Bob sold 11 adult tickets, 26 students tickets, and 4 child tickets for the school concert.
What is the ratio of student tickets to total number of tickets?
a. 26:37 b. 11:41 c. 26:41 d. 11:37

38. The ratios 40: ■ and 8:7 are equivalent. Find the missing number.
a. 42 b. 35 c. 32 d. 55

39. The scale for a model of a gorilla is 1:40. The gorilla is 184 cm tall.
What is the height of the gorilla in the model?
a. 7.4 cm b. 46 cm c. 4.6 mm d. 46 mm

40. Victor's model car covers 250 m in 5 min. What is the average speed of his car?
a. 125 m/min b. 50 m/min c. 250 m/min d. 1250 m/min

41. A dozen apples cost \$2.35. How much will 8 apples cost?
a. \$18.80 b. \$1.57 c. \$0.20 d. \$3.53

42. Solve this equation. $14 - 2x = 6$
a. 4 b. 14 c. –10 d. –3

43. Write an equation for this sentence.
Add 6 to a number divided by 3 and the answer is 16.
a. $x + 6 + \frac{1}{3} = 16$ b. $\frac{6+x}{3} = 16$ c. $x + \frac{6}{3} = 16$ d. $6 + \frac{x}{3} = 16$

44. Solve this equation. $\frac{p}{5} - 9 = 14$
a. 115 b. 79 c. 59 d. 18

45. Expand. $-4(q - 2)$

a. $4q + 8$ b. $-4q - 8$ c. $-4q - 2$ d. $-4q + 8$

46. Solve this equation: $-8 = 2(t - 5)$

a. 1 b. -1 c. -9 d. -5

47. Complete this table of values for the linear relation $y = 3x - 5$.

x	0	1	2	3	4
y					

a.

x	0	1	2	3	4
y	–2	–1	0	1	2

b.

x	0	1	2	3	4
y	–2	1	4	7	10

c.

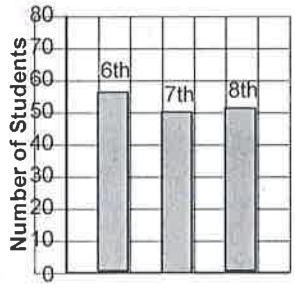
x	0	1	2	3	4
y	–5	–2	1	4	7

d.

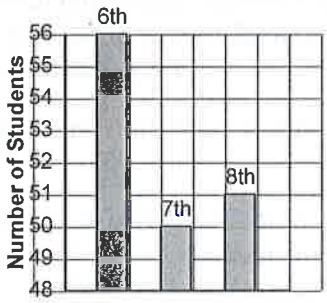
x	0	1	2	3	4
y	5	2	–1	–4	–7

48. These 2 graphs show the number of honour-roll students in each grade at Bridgeport C. I.

Graph A



Graph B



Which statement is true?

a. The 2 graphs display completely different data.
b. Graph B shows that Grade 6 has more than twice as many honour-roll students as Grade 8.
c. Graph A is a more accurate representation of the data because the graph starts at 0.
d. Both statements A and B

49. A lunch menu consists of 4 sandwiches and 5 drinks.
How many possible meals with a sandwich and a drink can you order?

a. 9 meals b. 20 meals c. 14 meals d. 23 meals

50. A red die, a blue die, and a green die are rolled. Each is a regular 6-sided die labelled 1 to 6.
What is the probability of rolling an even number on each die?

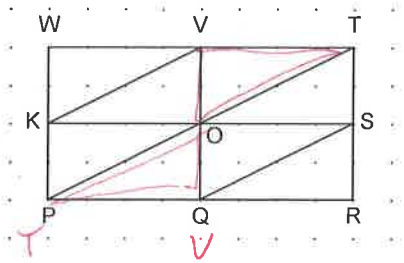
a. $\frac{1}{6}$ b. $\frac{1}{216}$ c. $\frac{1}{2}$ d. $\frac{1}{8}$

$\frac{4}{12} \times \frac{4}{12} \times \frac{4}{12} = \left(\frac{1}{3}\right)^3 = \frac{1}{27}$.

51. A spinner has 12 equal sectors. 4 sectors are coloured red, 3 are coloured blue, and 5 are coloured yellow. The pointer on the spinner is spun 3 times.
What is the probability of the pointer landing on red each time?

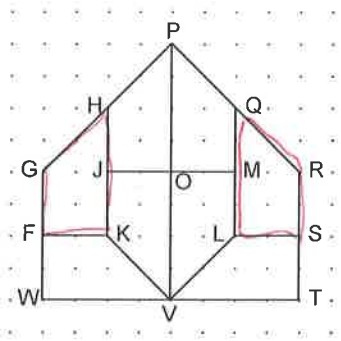
a. $\frac{1}{27}$ b. $\frac{1}{4}$ c. $\frac{1}{3}$ d. $\frac{1}{144}$

52. Name the image of Triangle VOT after a rotation of 180° about O.



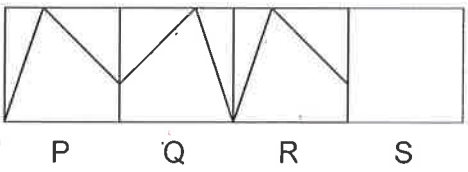
a. Triangle WKV
b. Triangle SOT
c. Triangle RSQ
d. Triangle QOP

53. Quadrilateral QRSL is the transformation image of Quadrilateral HGFK. Describe the transformation.



a. Reflection in the line JM
b. Reflection in the line PV
c. Translation 6 units right
d. 180° rotation about O

54. Square tiles are being laid out in this pattern shown.



Look for transformations that produce Q from P and R from Q.
What transformation will produce tile S from tile R?

a. Translation
b. Reflection
c. 90° clockwise rotation
d. 90° counterclockwise rotation

It pattern is to continue!