

Grade 6 math PAT practice: Part B

NAME	DATE	TIME	SCORE / 40
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No calculator. Answer every question. Read each question carefully, and look at every table, graph and picture.

1 Solve for x: $2x - 2 = 3$	2 $3888 \div 16 = ?$
3 Write $2x + 4x + 2x + 3$ with like terms collected.	4 What is the opposite of the opposite of -17? ☐ -17 ☐ 17
5 How many cubic centimetres are in 3 cubic metres?	6 A school has 105 children. 60% of them walk to school. How many children walk?
7 A car goes 102 kilometres in 2 hours. What is the car's speed, in kilometres per hour?	8 Write 7×7 using a base and an exponent.
9 Apples cost \$1.35 per kilogram. How much do 6 kilograms of apples cost, in dollars?	10 Write these numbers in order from least to greatest: $-3, 8, 7, -6$.
11 $7 \times \frac{2}{3} = ?$ Give the answer as a mixed number.	12 Use the commutative property of addition to write $2 + 5n$ another way.
13 3 notebooks cost \$8. At the same price, how much do 12 notebooks cost, in dollars?	14 Ben says the prime factorization of 98 is 2×49. Is Ben right? ☐ Yes, Ben is right ☐ No, it is 2×7^2 ☐ No, it is 2×7
15 Leo runs $\frac{1}{5}$ kilometre each day for 11 days. How many kilometres does Leo run in all?	16 The bottom layer of a box holds 16 unit cubes. The box holds 6 layers of the same size. What is the volume, in cubic units, of the box?

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- 17** The point $(-3, 5)$ is reflected across the y-axis. What are the coordinates of the image of the point?
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- 19** Ana says $7:2 = 21:16$, because 14 is added to both numbers. Fill in the box to make the ratios equivalent: $7:2 = 21:\square$
-

- 21** A class needs \$400 for a trip. It raised \$121.50 at a bake sale, \$121.65 at a car wash and \$45.50 at a book sale. How much more money does the class need, in dollars?
-

- 23** Two numbers are written as products of primes: $2^2 \times 3^3$ and $2^3 \times 3 \times 7$. Write all the common factors of the two numbers, from least to greatest.
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- 25** Emma wins if a red marble is picked at random, and Noah wins if a blue one is picked. Which bag makes the game fair?
- ☐ A bag with 5 red, 6 blue and 3 green marbles
- ☐ A bag with 5 red and 5 blue marbles
- ☐ A bag with 3 red, 2 blue and 4 green marbles

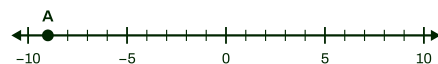
- 18** A group of 40 students shares the cost of the team jerseys, \$304. Each student pays the same amount. How much does each student pay, in dollars?
-

- 20** The point $(-6, -3)$ is reflected across the x-axis. Which coordinate of the point changes sign?
- ☐ Only the x-coordinate
- ☐ Only the y-coordinate ☐ Both coordinates

- 22** A school has 325 children, and 4% of them walk to school. Ivy says 130 children walk, because 4% is 0.4 and $0.4 \times 325 = 130$. How many children walk to school?
-

- 24** A recipe uses $\frac{4}{5}$ L of milk and $\frac{5}{11}$ L of water. How many litres of milk and water does the recipe use in all?
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- 26** Point A is plotted on the number line below. What is the absolute value of the number at point A?



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27 Which property shows that $4x + 9 = 9 + 4x$?

- ☐ Associative property of multiplication
☐ Associative property of addition
☐ Commutative property of addition
☐ Commutative property of multiplication

29 Leo solved $2x + 3x - 3 = 7$ in the steps below. Which step is the first one that is wrong?

Step 1: $5x - 3 = 7$

Step 2: $5x = 10$

Step 3: $x = 5$

- ☐ Step 1 ☐ Step 2 ☐ Step 3

31 A parallelogram has a base of 6 metres, a perpendicular height of 5 metres and slanted sides of 9 metres. Ana says the area is 30 square metres. Is Ana right?

- ☐ No: the area is 15 square metres
☐ Yes: the area is 30 square metres
☐ No: the area is 54 square metres

33 The rule is: multiply the input by 7, then add 4.

Write the missing outputs in the table, in order:

Input: 1, 4, 5, 10, 11, 12

Output: 11, , , , ,

28 Ivy worked out $9 + 2^2 \times 2$ in the steps below. Which step is the first one that is wrong?

Step 1: $9 + 2^2 \times 2 = 9 + 4 \times 2$

Step 2: $= 13 \times 2$

Step 3: $= 26$

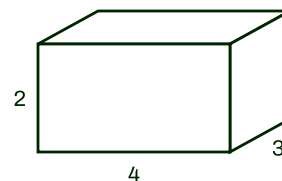
- ☐ Step 1 ☐ Step 2 ☐ Step 3

30 Which of these ratios are equivalent to $2 : 9$?

Tick every answer that is true.

- ☐ A $6 : 27$
☐ B $8 : 13$
☐ C $8 : 36$
☐ D $9 : 2$
☐ E $10 : 45$

32 Lengths on the prism below are in centimetres. What is the volume, in cubic centimetres, of the prism?



34 The table shows pairs of numbers x and y . Each y is found from its x by the same rule.

x : 3, 5, 7, 9

y : 9, 15, 21, 27

What is x when y is 120?

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1	$\frac{5}{2}$	2	243	3	$8x+3$
4	-17	5	3 000 000	6	63
7	51	8	7^2	9	8.10
10	-6, -3, 7, 8	11	$4\frac{2}{3}$	12	$5n + 2$
13	32	14	No, it is 2×7^2	15	$2\frac{1}{5}$
16	96	17	(3, 5)	18	7.60
19	6	20	Only the y-coordinate	21	111.35
22	13	23	1, 2, 3, 4, 6, 12	24	$1\frac{14}{55}$
25	A bag with 5 red and 5 blue marbles	26	9	27	Commutative property of addition
28	Step 2	29	Step 3	30	A, C, E
31	Yes: the area is 30 square metres	32	24	33	32, 39, 74, 81, 88
34	40	35	A, C	36	117
37	C, D, E	38	21, 42, 49, 63, 70	39	(-5, -1)
40	21				